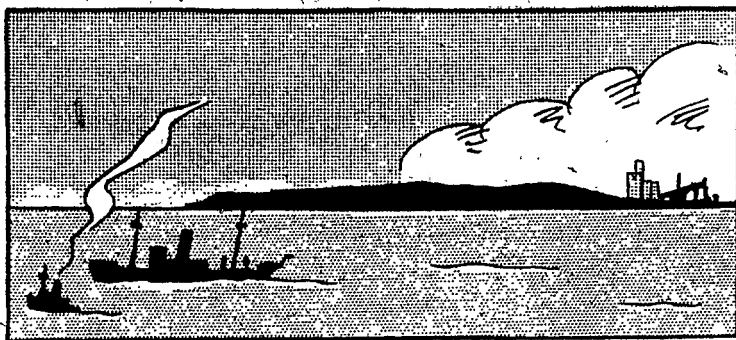




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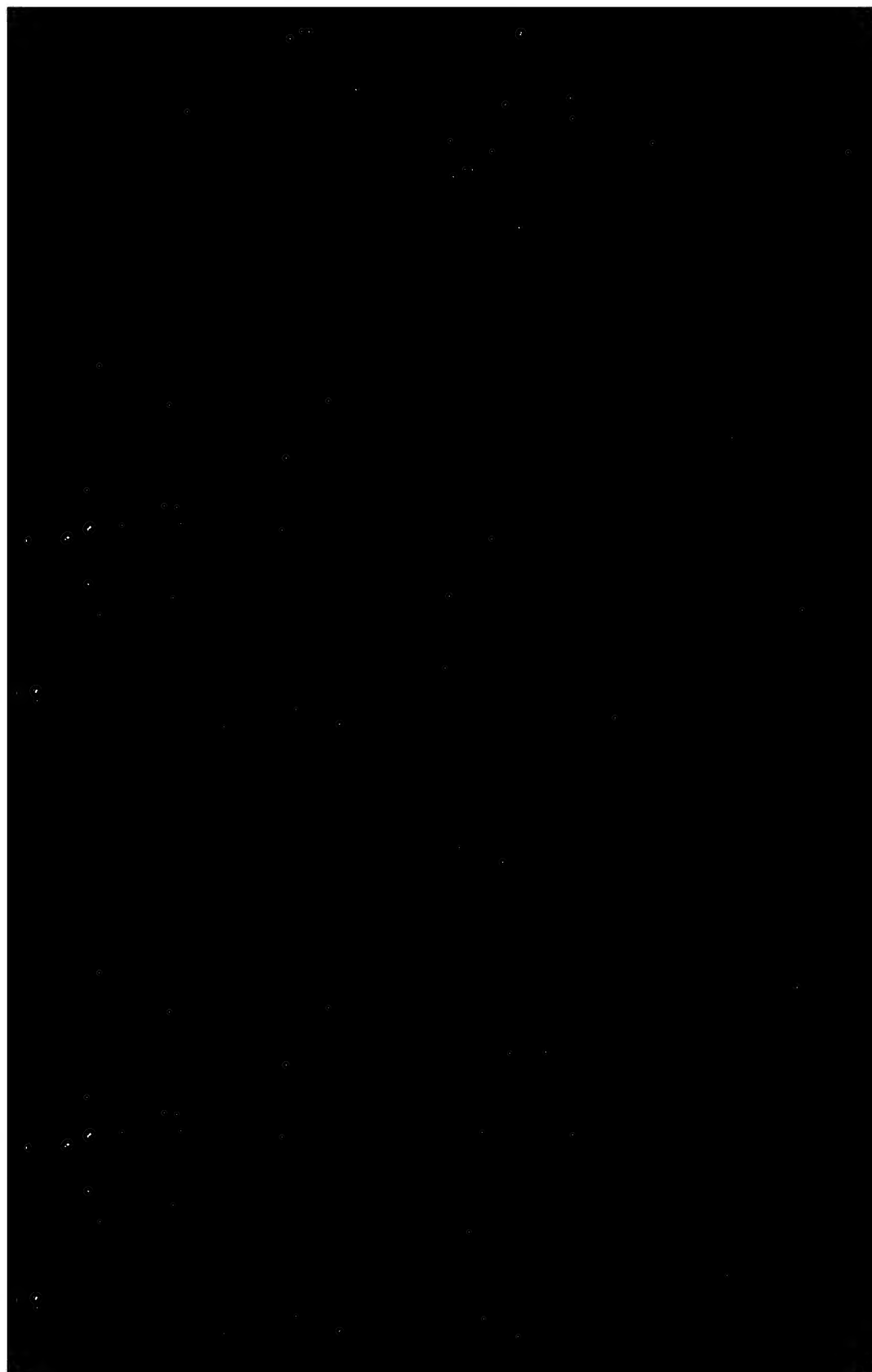
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**A Shipment of
Saskatchewan Wheat
to Europe**



Saskatchewan Co-operative Wheat Producers Limited

REGINA



Via CHURCHILL

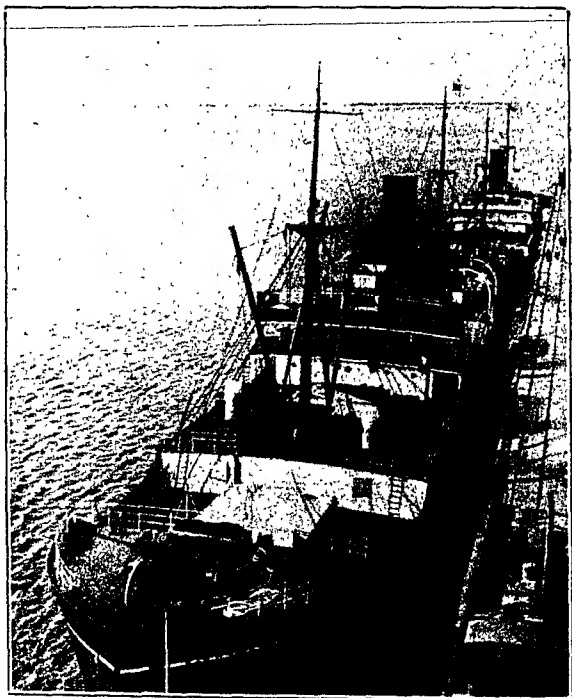
*A Shipment of
Saskatchewan Wheat
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Saskatchewan Co-operative Wheat Producers Limited
REGINA

JANUARY, 1936



HD 9044
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Two freighters tied up at the Churchill dock.

Foreword

IN the following pages an attempt is made to follow, step by step, the progress of a shipment of Saskatchewan wheat to Europe by way of Churchill. - Thus while the main theme will be the Hudson Bay route, this pamphlet also seeks to present a picture of the transportation overseas of Western Canada's most important commodity.

The material has been prepared and issued by the Saskatchewan Wheat Pool organization, which has shown a practical interest in the Bay route since it opened to modern commerce in 1931. Including the trial shipments of that year exported by the Pool's Central Selling Agency, this farmer-owned organization has supplied almost 88 per cent of all wheat shipped to the Hudson Bay port up to the winter of 1935. In 1934 its action in chartering thirteen ships out of a total of fifteen made possible experimental shipments of other articles besides wheat.

The illustrations and the bulk of the material here presented were previously published in *The Western Producer*. With a few exceptions, the photographs were taken for the Pool organization; for the remainder, acknowledgments are made to the Canadian National Railways, Department of Marine, and Hudson's Bay Company.

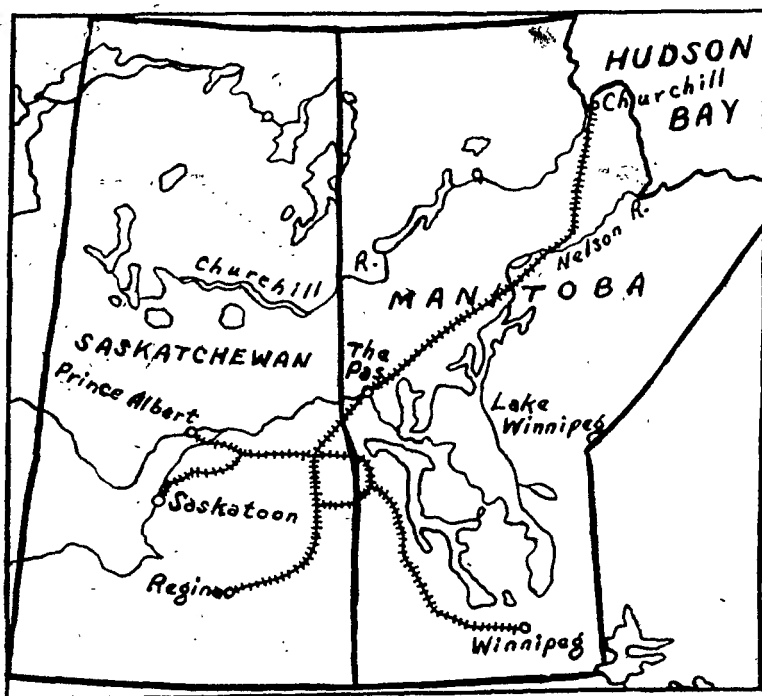
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Northern Saskatchewan to The Pas

WHILE we shall be speaking of the Hudson Bay route as a project for Western Canadians, actually one prairie province is more closely concerned than its two neighbors. This is Saskatchewan's route. Alberta looks to the Pacific, and Manitoba no doubt will continue to depend almost entirely on the Great Lakes outlet until a link with the Hudson Bay Railway is constructed along the eastern side of that province.

Railways already built place a large part of settled Saskatchewan closer to Churchill than either to Vancouver or Montreal. Moreover, a car of Saskatchewan wheat travelling westward has a succession of mountain barriers to cross, an arduous journey; a car travelling eastward has its contents transferred to boat when it reaches Lakehead, and again on the upper St. Lawrence before finally the grain goes aboard an ocean freighter. The way to the Bay is direct and level.



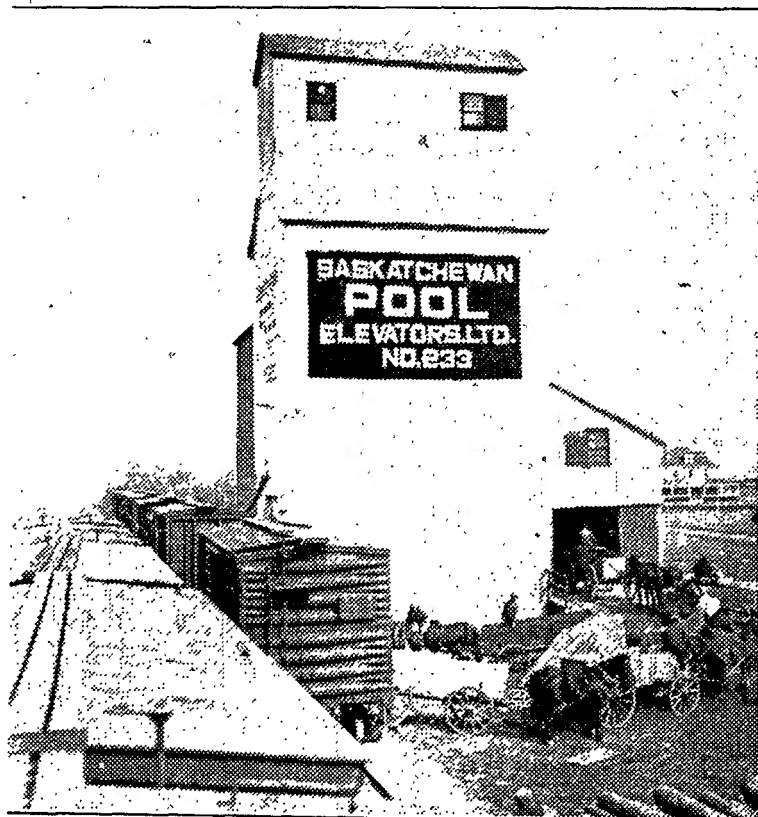
Sketch map of Manitoba and Saskatchewan, showing the relative positions of Churchill and principal points in the two prairie provinces, together with existing railway communication.

So to that inland sea Saskatchewan now turns its eyes. Unfortunately, ice closes the route for most of the year; a season of barely two months has been the experience so far. But in time this may be extended by another month or more.

Some idea of the possibilities of Western Canada's most direct sea route to Europe, even with a short season, may be had from these comparative distances:

From	TO LIVERPOOL	
	*Via Montreal and Great Lakes	Via Churchill
	Miles	
Regina...	4750	3777
Saskatoon	4893	3750

* Strait of Belle Isle route. By Cabot Strait, 247 miles longer.

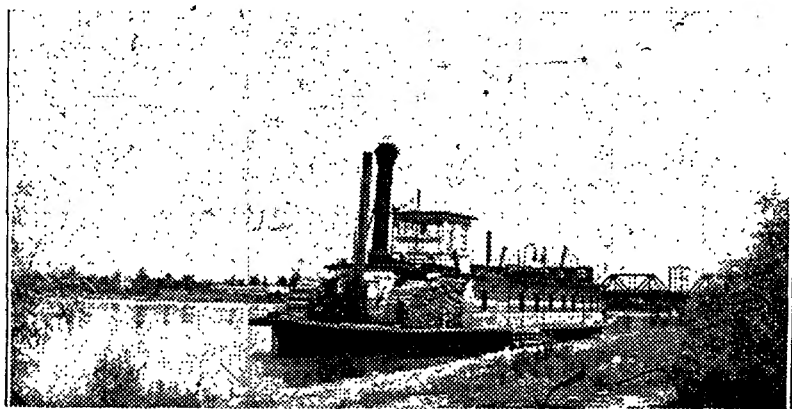


Loading cars of wheat at Aberdeen, northeast of Saskatoon, in May, 1932, part of the original commercial shipments destined for export via Churchill.

Of the total distance involved, the land haul is shorter to Churchill than to the Head of the Lakes from most points right across the northern part of Saskatchewan. At present there is a freight differential for export grain in favor of Churchill (on C.N.R. lines) ranging from one to four cents per 100 lbs. at more than three hundred points in the Province. In addition, approximately seventy points have an equal rate as between Churchill and Fort William. In western Saskatchewan the favorable freight rate extends as far south as the South Saskatchewan River.

Wheat shipments for Churchill are drawn from this wide area. They head eastward, and by the time they reach Hudson Bay Junction in the northeast are well out of the great grain-growing country. Thenceforward the railway runs through forests and a maze of lakes, and eventually over level tundra to the shore of Hudson Bay.

These cars, laden with Saskatchewan wheat, cross the boundary into Manitoba and reach The Pas, some three hundred miles from Saskatoon. Situated on the main Saskatchewan River, it has a population, according to the last census, of 4,000, and is a decidedly mining-minded town. For the Hudson Bay Railway, of which The Pas is the westerly terminus, has contributed much already to opening up rich mineral fields in northern Manitoba. In days to come this fact may have some significance in the economic development of the Bay route and of Western Canada generally. It is wheat, in the final analysis, that is making these things possible.



The broad Saskatchewan River at The Pas, Manitoba, western terminus of the Hudson Bay Railway. Part of the steel railway bridge may be seen to the right.



Wabouzen, 137 miles from The Pas, first divisional point on the Hudson Bay Railway. Comparatively near lies one of several great potential power developments on the Nelson River.

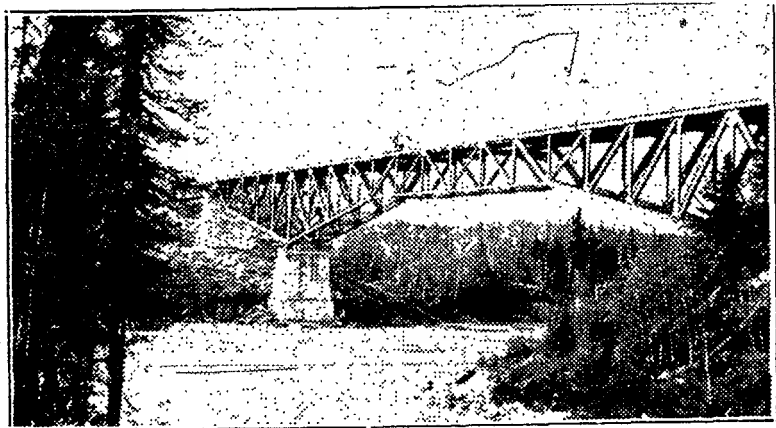
On the Hudson Bay Railway

LONG before the days of steamships and railways, ships were sailing into Hudson Bay, and hardy adventurers were trekking overland into the heart of Canada. They were doing so since the early seventeenth century. The first wheat ever grown in this country followed the route which today is being developed because of the West's ability to produce the finest bread wheat in the world. It was brought from Scotland in 1812 by Lord Selkirk's settlers, who, however, found winter seed wheat unsuitable in their new home on the banks of the Red River. Obstacles of environment, transportation, etc., stood in the way of wheat growing for seventy years longer, but by the early 'eighties Manitoba hard wheat was beginning to win its reputation.

Now, with the changes of another half-century, the centre of Canada's chief industry has shifted westward, and part of its product is seeking an outlet by that same way over which came those Highland forerunners of prairie agriculture.

To achieve this object a railway had to be laid across the northern wilderness from The Pas to tidewater. A public undertaking, it was begun in 1911 and the steel pushed 332 miles northeastward before construction was halted by the War. It then languished until 1927, when the whole project was re-examined and a change of terminus decided upon after recommendation by engineers (the Palmer investigation). Thus historic Churchill, and not Nelson, as formerly intended, was the final choice as a port.

This change of destination meant a lot of work and materials had gone for nothing. The costly mistake was accounted for by insufficient knowledge of the two harbors and lack of experience in railway



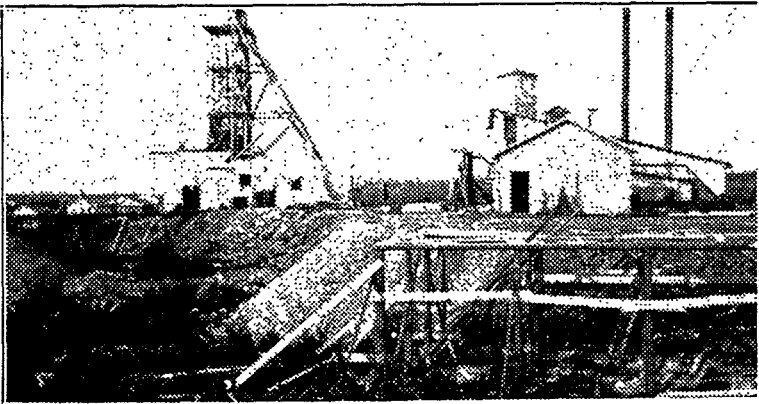
The first crossing of the Nelson River: Manilou Rapids, at mile 242.



Left, right: sand erosion of the Via CHERCHI

construction in the sub-Arctic. Churchill had been considered as a port long before the Hudson Bay route reached the blueprint stage, but several obstacles seemed to rule it out, of which the most serious was that seventy-five miles of track would have to be laid over frozen muskeg, and it was feared that the foundation would soften in summer and the whole roadbed sink out of sight. By 1927, however, the railway builders had learned that a thick layer of gravel on the muskeg surface acted as an additional insulator and so kept the foundation from collapsing. Other supposed difficulties in Churchill harbor were found upon close examination to be not excessive; indeed the only point at which Port Nelson kept its superiority was in the matter of higher annual temperatures, and nothing could be done about that.

The track already laid many years earlier had fallen into disrepair, and required reconditioning. This was done. Steel bridges spanned two formidable rapids on the great Nelson River, and a few miles beyond the second of these crossings the railway was diverted almost due north for the remaining 150 miles to Churchill. The job was finished in 1929.

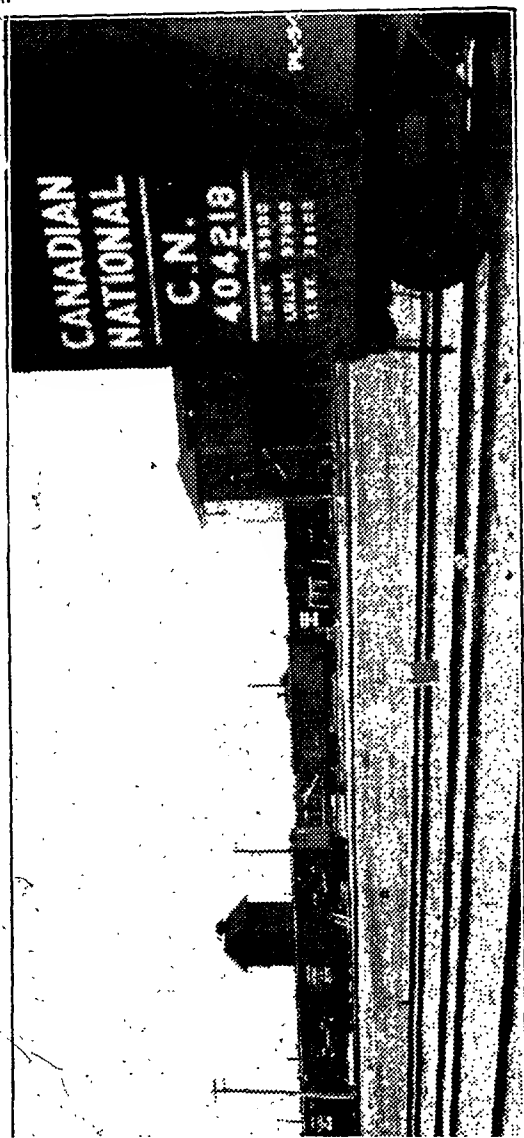


Gold mine on God's Lake, scene of much activity at the present time. An extensive mining area south of the railway, embracing Knee Lake, God's Lake and Island Lake, is reached from Ilford (mile 286), where an airbase is situated.

Northern Manitoba is mostly water, spruce forests and muskeg. Through this level country the Hudson Bay threads its course from its westerly terminus, The Pas, and at once enters a region either proved or suspected to be rich in minerals. Indeed, over half the total distance of 510 miles comes within this category. Largely because of the railway's existence, mining discoveries and developments are rapidly transforming this part of the pre-Cambrian shield, from the Saskatchewan border down to Island Lake near the Ontario line. Gold offers the chief lure at present, but other minerals—such as copper, zinc, silver, lead and lithium—seem destined to mean just as much to the West some day.

Meanwhile in these early days of the Hudson Bay Railway





Grain cars at Gillam, distasteful point on the Hudson Bay Railway. This place is situated in the bush a few miles west of Kettle Rapids. All around lies moss, water, spruce, tamarack and Labrador-tea—typical muskeg country. It is named after Captain Gillam, commander of the Nonsuch, whose voyage of exploration led to founding of the Hudson's Bay Company, and who years later went down with his ship at the mouth of the Nelson River.

prospectors set out along the line of steel in search of new wealth, while others patronize the speedier 'plane or perhaps a combination of the two kinds of modern transportation: Here and there in the bush those who use the less spectacular method drop off and take to canoe, while the wheat trains, carrying thousands of bushels of what is still Canada's principal wealth, roll on to the distant Bay.

The mineral belt is left behind at last. Where the Nelson River pours its flood through the narrow channel known as Kettle Rapids, 332 miles northeast of The Pas, the Hudson Bay Railway makes its second crossing of this great stream (which in reality is a continuation of the Saskatchewan out of Lake Winnipeg). A steel bridge, 1000 feet long, spans the rapid.

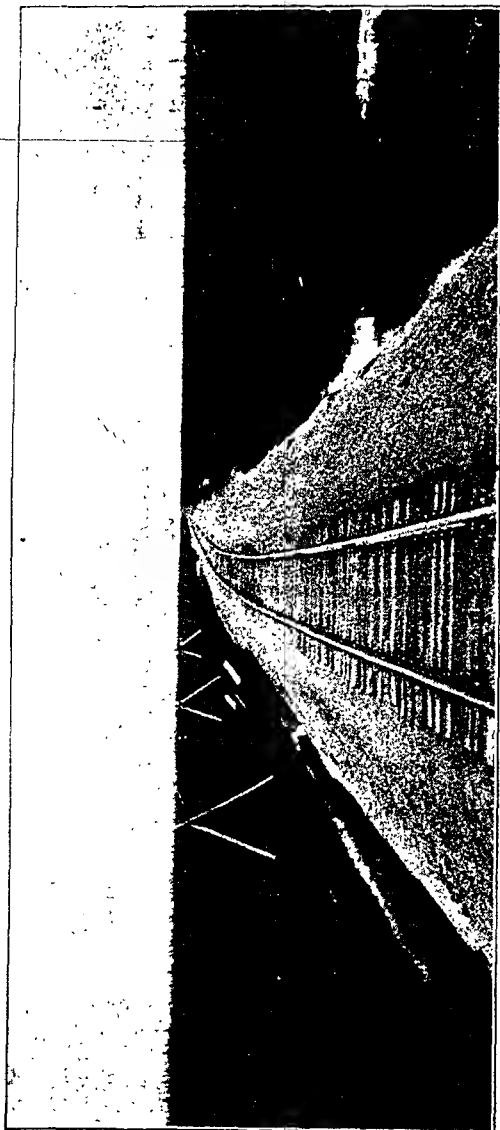
A short way beyond this crossing—at mile 356, to be precise—the track swings abruptly, abandoning the old grade to the river's mouth. Already farther north than any other railway in Canada, it makes a beeline up the 94th Meridian, running nearly parallel with the Hudson Bay coastline. The Nelson is seen no more, and no other large watercourse is encountered until the splendid Churchill River itself comes in view a few miles above tidewater. Practically all those northern streams lack valleys of any depth.

The wheat trains move to their destination over a smooth level roadbed which gives little indication of the difficulties of constructing it through that vast territory of frozen muskeg. Timber becomes sparser and more stunted, particularly beyond the Owl River, 445 miles from The Pas. This is a land mostly open to the horizon, a carpet of greenish-gray "caribou moss" broken by innumerable ponds and small lakes; but the trees—dwarf spruce and tamarack—dotted in clumps about the broad landscape, do not disappear entirely until some three or four miles from Churchill. When white men first landed there in 1619, it is said, timber grew to the water's edge.

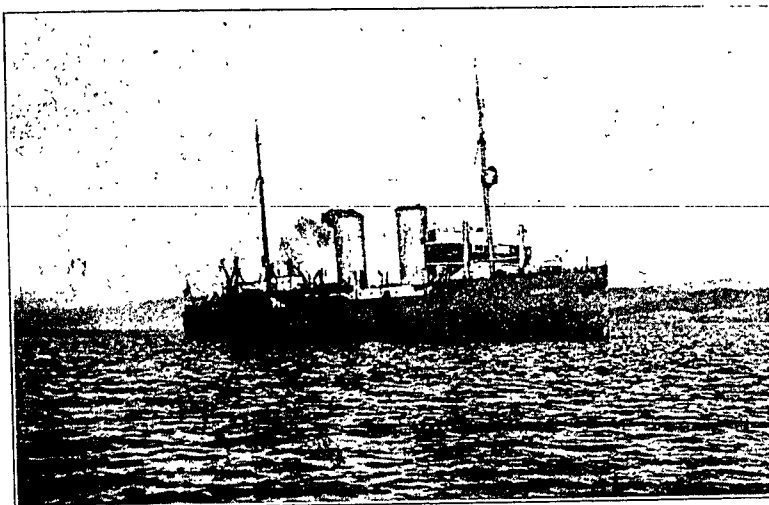
With the sudden ending of the trees the railway emerges on to completely open tundra, flanked by the Churchill River on the west. Ahead is open water—Hudson Bay—and, like a fortress in the centre of this panorama, rises the new Dominion Government terminal elevator. It has an imposing situation.

This is the immediate destination of cars of Saskatchewan wheat which originated on the fertile plains seven hundred to nine hundred miles away.

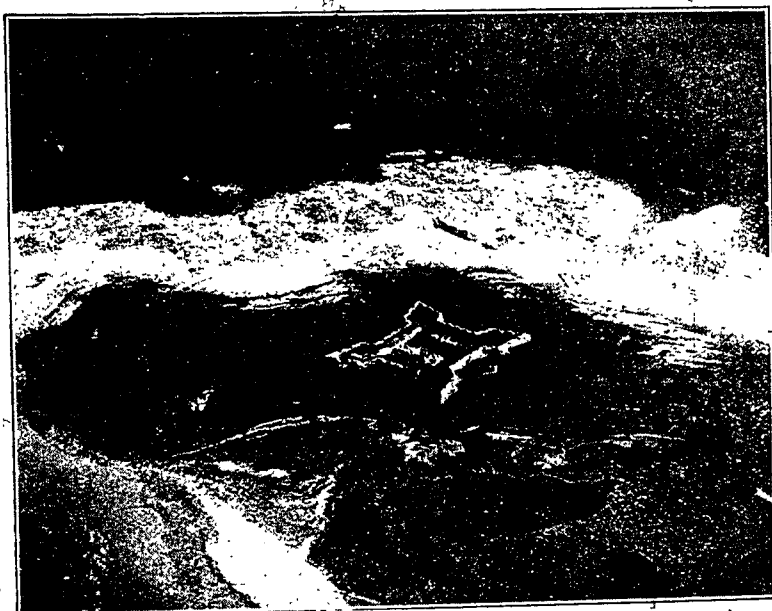
The first near-at-hand evidence of the permanent Churchill takes form during those final few miles, when a straight, narrow ridge approaches the track and likewise heads for the port. This is Churchill's water supply, conveyed from a group of small lakes in the vicinity. The pipeline is built above ground all the way, protected from frost by a packing of moss. So efficient is this northern moss as an insulator that even in summer frost may be struck not much more than a foot below its surface. For this reason the telegraph wires along the railway north of the Nelson are strung on specially designed tripods requiring little foundation.



In the "land of little sticks": the Hudson Bay Railway pushing its way northward across forlorn muskeg wastes between the Nelson and Churchill rivers. Notice the special tripods for carrying telegraph wire, instead of the usual poles.



The Canadian government steamship M. B. McLean, powerful ice-breaker which patrols Hudson Strait each navigation season, and which has proved of invaluable assistance to mariners. The men spoken of in the section following, who cruised in and out of Hudson Bay from the seventeenth century on, had nothing like this to help them.



Aerial view of Fort Prince of Wales on Eskimo Point, with the Churchill River estuary beyond.



Historic Churchill

IN these days of radio, echo-sounding devices, gyro-compass, ice-breakers, and so on, navigation of northern waters—in season—may be straightforward enough. But it was another story when bold mariners sailed into the unknown seeking a northwest passage to the Indies. First of them was Cabot in 1498 who reached the entrance of Hudson Strait. More than a century later came Henry Hudson, forcing his barque *Discovery* through the ice-choked Straits to emerge at last on the Bay which now bears his name. There, after wintering near its southern end, he and a few loyal followers were cast off by a mutinous crew and left to perish.

In 1619, nine years after Hudson's last fatal voyage began, Jens Munck, the Dane, set out with two ships to explore and colonize for his king, and nearly foundered in the Straits. The ice passed, a storm drove him across the Bay to a coast which Hudson had never seen. By chance he found refuge in a land-locked estuary, such a harbor as he could not have discovered elsewhere in all that bleak region. This was the mouth of the Churchill River, and here the Danes cast anchor. It was then late in the season; they were trapped and obliged to winter amid conditions for which they were completely unprepared. Scurvy carried off every member of both crews except Munck himself and two others. Next summer these three emaciated survivors of a terrible ordeal scuttled one ship and managed to sail the other all the way back to Norway and then home, thanking God for their deliverance from "icebergs and dreadful storms and foaming seas."

Churchill's next chapter opened with the fur trade. It was one of several forts occupied by the Hudson's Bay Company along the inland sea during the latter part of the seventeenth century and figured in the furious wars when English fought French for possession of the Bay almost unceasingly for a hundred years.

Two French soldiers of fortune had made the discovery that the remote northwest was rich in furs. Radißon and Groseilliers spent five years roaming the centre of the continent, and in the summer of 1662 they inspected country lying along the "Bay of the North." Rejected by their own countrymen in New France, they took their story and proposals to London, arriving there penniless in 1666. King Charles II heard them himself, was impressed, and had an expedition despatched to Hudson Bay two years later. The first English fort in the land was built at the mouth of Rupert River on James Bay. The ship *Nonsuch* set sail for England next June with a cargo of furs. The expedition's backers were delighted, and forthwith applied for a charter, which was granted them in May, 1670, as "the Governor and Company of Adventurers of England trading into Hudson's Bay."



A record of an early voyage; one of many legends on the rocks of Sloop Cove opposite Churchill. The Furnace and Discovery were two vessels fitted out by the Admiralty in 1741 to search for a northwest passage. This expedition wintered in the Churchill River, went north next year, and returned to England convinced that no such passage existed.

Churchill was founded by the Company in 1689, but the partially built post was burned down the same summer, and the party returned by ship with what it could salvage to Nelson.

English traders were kept far too busy fighting the French during the following quarter of a century to think about re-establishing their post at the mouth of the Churchill River. Their trade was throttled for a time, their forts captured and their men slain or taken prisoner as the illustrious d'Iberville swept the Bay. The final exploit of this marauder was a tremendous sea battle off Port Nelson in 1697. Caught between the shore cannon and three English men-of-war, his single ship, the *Pelican*, sank one foe and captured another; thereupon a hurricane drove victor and prize on the shoals; the French survivors landed, and with aid from a fleet most opportunely arrived, forced Nelson to surrender. This loss left the Adventurers of England with only one fort on the whole Bay. Fortunately for them, d'Iberville departed for other fields of glory, such as founding the colony of Louisiana.

In the end this particular war went against France. Hudson Bay was restored to the English by the Treaty of Utrecht, and four years later (1717), the Company was able once more to occupy Churchill. This was its base for trading with the northern Indians.

A fort was built, timber being brought from twelve miles upstream. Later, in order to protect the finest harbor on Hudson Bay, the Company began work in 1733 on a more ambitious structure across the river. Fort Prince of Wales, a magnificent stone stronghold in a land otherwise guarded by wooden palisades, was erected: the task took nearly forty years.



North wall of the old fort, the mounted cannon being a recent restoration.

Churchill became the starting point for many adventurous journeys by sea and land. Richard Norton, an apprentice who rose to be governor, went overland almost as far north as Chesterfield Inlet. Minerals lured explorers as well as furs, for bands of Eskimos and Chippewyan Indians were bringing stray specimens of copper and gold with them into the Churchill trading post and talking of vast stores of metal rocks in the northern wilderness.

The hope of discovering mines was a strong motive in the last expedition of Captain Knight, a hardy veteran of the Bay. He had in mind also whale fisheries, and perhaps most of all, that fabled passage to the South Seas. For while the shores of Hudson Bay had now become a prize because of the wealth to be derived from animals' skins, there still came mariners who scanned those desolate wastes hoping only to find an opening which would lead them ever westward to the spices and silks of the Indies. Knight was 80 when with two vessels he sailed from Churchill late in the season of 1719, to meet an end more complete than that which befell the Munck expedition. One of his original ships had already been crushed by ice in Hudson Strait, on the way to Churchill. Undeterred, the old warrior led his men up the unknown westerly coastline. Their fate was not learned for fifty years, but as pieced together the story told how both ships were wrecked on Marble Island, a bare, windswept place just south of Chesterfield Inlet, and how Knight and his crews perished there, the last pair of survivors lingering on in desolation for two years, enduring two of those pitiless northern winters before succumbing.

From Churchill, one of the Company's most famous servants, Samuel Hearne, set out on his interior explorations which brought him in 1771 to the mouth of the Coppermine on the Arctic Ocean. A skilled pathfinder, Hearne seems to have been singularly unlucky

in martial affairs. He was powerless to prevent the Bloody Falls massacre of Eskimos at the hands of his Indian guides, and twelve years later (1782) he was placed in an equally helpless position when in command of Fort Prince of Wales. A French fleet under La Pérouse surprised the place and captured it without a shot being fired. The fort was dismantled and partly destroyed, although the victors could make little impression on the walls of solid masonry.

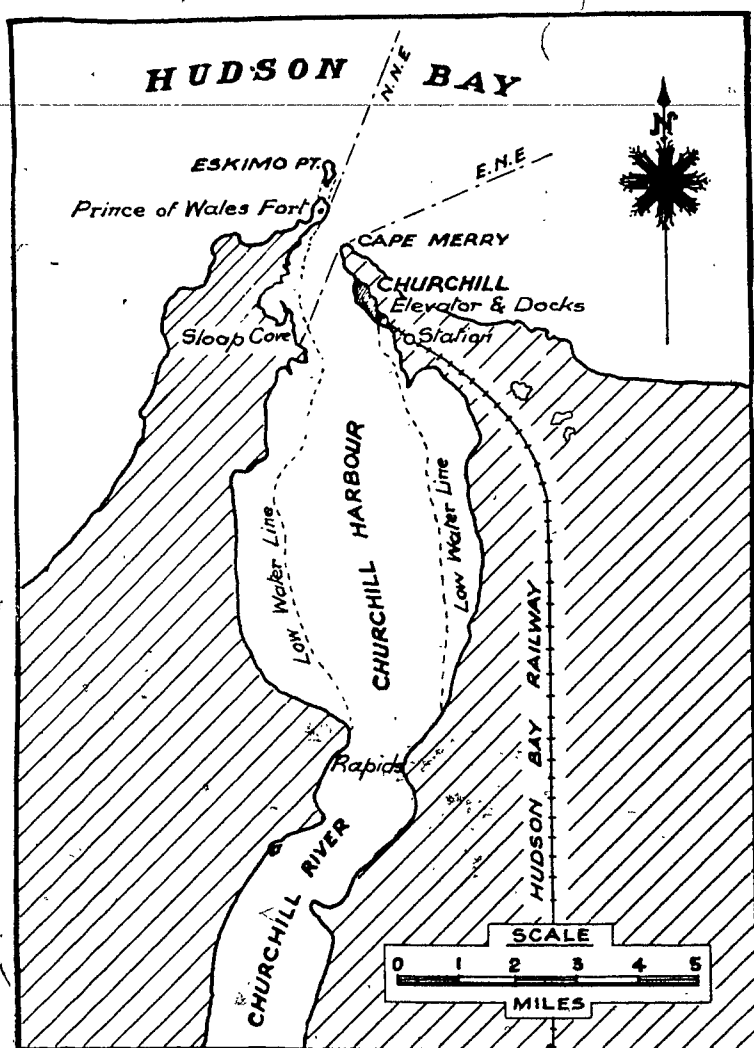
Churchill, restored to the English, was the landing place of a contingent of Lord Selkirk's colonists in 1813. Some of them spent the winter in tents within the ruins of the old fort—a period of suffering and privation which continued long after the settlers finally reached their intended homes far inland on the Red River.

After the fall of Fort Prince of Wales, Churchill lost much of its former prestige. Hearne went back and did his best, but the centre of trade gradually passed to York Factory (Nelson). For more than a century it remained an isolated fur post and white whale fishing station.

The years went on, and at length agriculture displaced the great fur trading companies in the West. In the 1880's men were already thinking of a railway to Hudson Bay, and a seaport from which they might send out the produce of the growing country; and an expedition to study the question recommended Churchill. So it turned out to be in the end.



Gateway of Fort Prince of Wales.



Churchill and its harbor. The position of the Hudson Bay port is $58^{\circ} 48' N.$ and $94^{\circ} 10' W.$

A Northern Seaport

CHURCHILL, at once the oldest and the youngest of Western Canada's seaports, lies on the east bank of the Churchill River, about a mile from its mouth, and less than one hundred miles south of the boundary between Manitoba and the North-West Territories.

As it nears the end of its course, the river flows due north, emptying into Hudson Bay between two rocky promontories which guard the entrance to one of the finest natural harbors on the continent. In the words of the late Sir Frederick Palmer, "Churchill provides a completely sheltered port for shipping from the moment the entrance is passed."

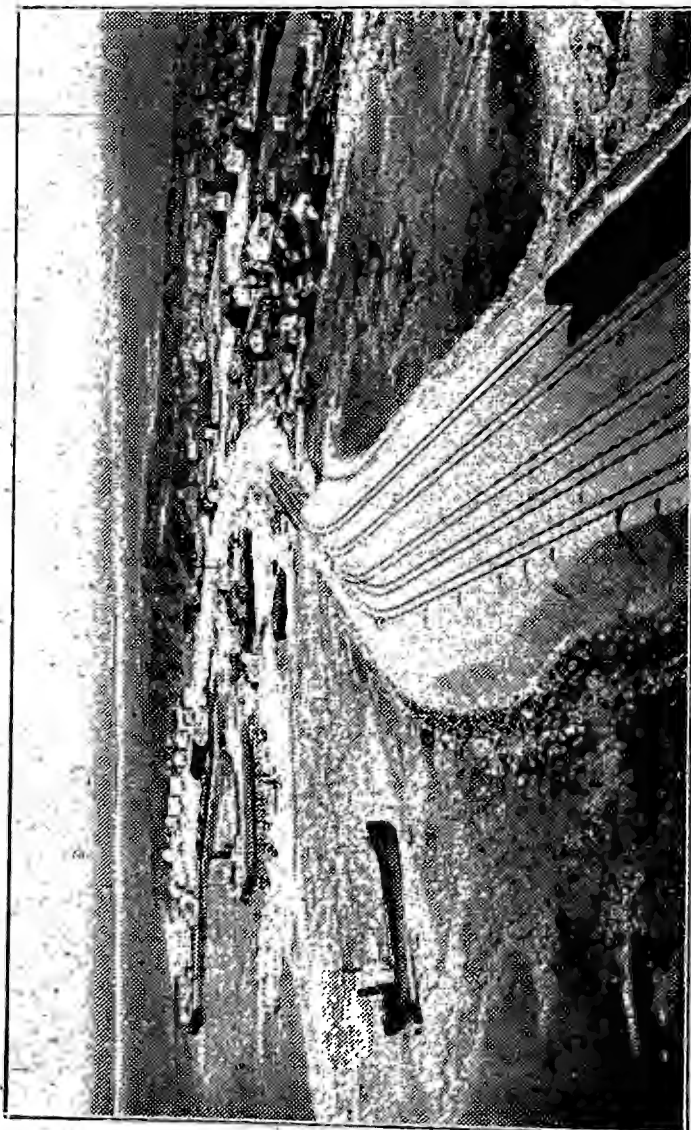
Reference to the accompanying map will show that the inside area is vulnerable to gales only between directions north-northeast and east-northeast, and these expend their force on a short strip of shore on the western side. Thus Churchill itself and the broad channel leading to it are absolutely protected by these rugged breakwaters rising to heights of from forty to seventy feet. All the rest of the surrounding coastline is low and swampy.

The harbor is shaped something like a flask, rather narrow at its mouth and widening as the passage penetrates southward. In front of the dock it is a mile wide at low tide, and further upstream attains a width of two-and-a-half miles at low water.

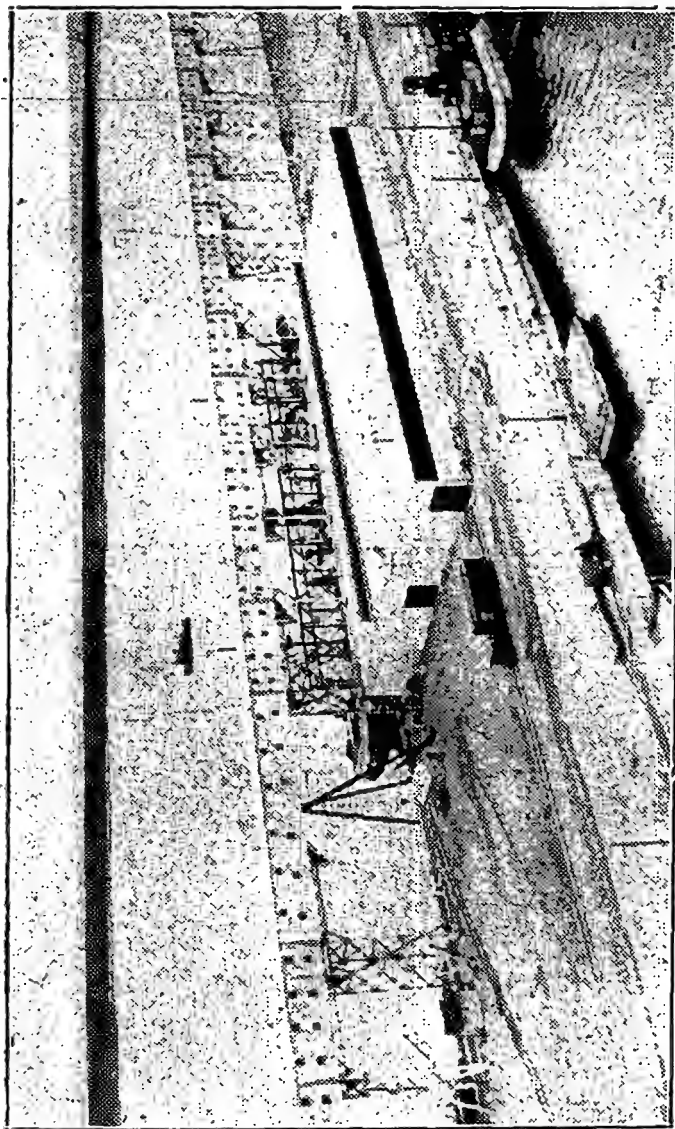
Because much of the channel already had a minimum depth of thirty feet at low tide—a depth ample for the average loaded ship—the amount of work required to equip this northern seaport for modern ocean traffic was not excessive. Indeed, only one mile of dredged channel lies between Hudson Bay and the dock at Churchill. A notable feature, when comparing Churchill with many other ports, is that the pilot is on board for only a mile or so. Steamers come right in from the deep sea to the harbor mouth.

Building of the port—described as "a very ordinary, simple piece of large construction work, presenting no difficulties whatever"—entailed a good deal of dredging. This was the chief item in the work, some two million cubic yards of hard boulder clay being removed from the river bottom. If, as is believed, the Churchill is not a silt-carrying river to any extent, future maintenance operations in the harbor ought to prove fairly, simple.

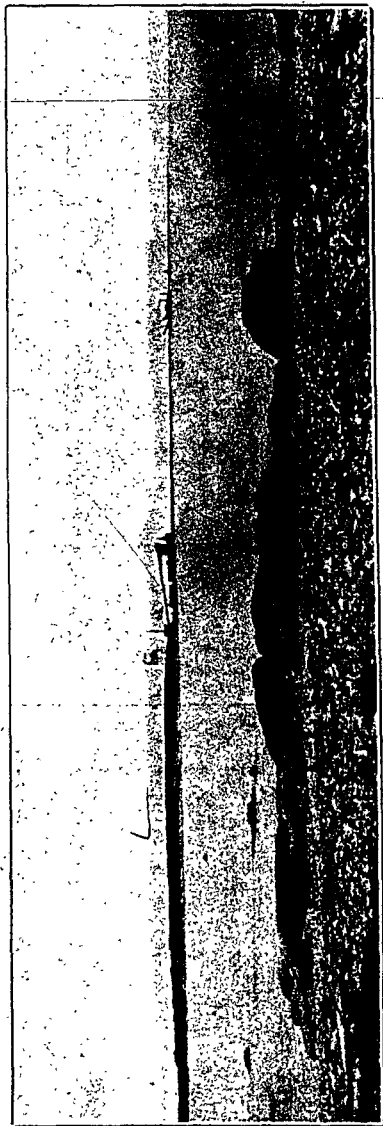
Such is the port of Churchill today. As we have seen, it has a long and exciting history. After three centuries, it remains a small settlement, with a permanent population of perhaps fifty, augmented to around three hundred during the port's busy season.



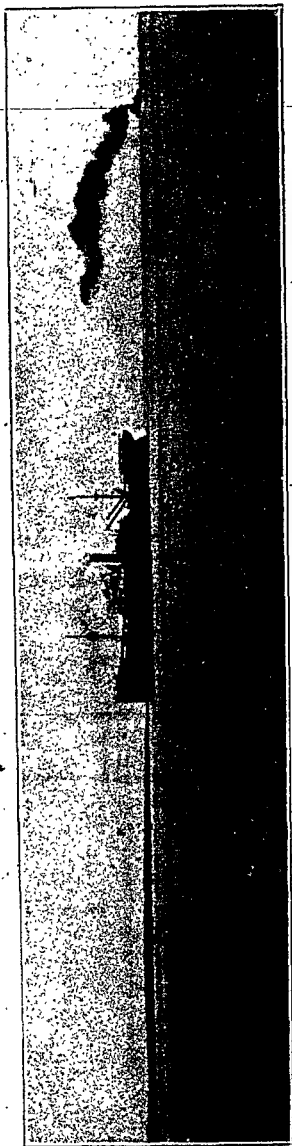
This view looks northwesterly from the elevator workhouse, looking in Cape Mery and the harbor entrance. Post Prince of Wales appears as a low rectangle mid-way along the east shore jutting out into Hudson Bay. Most of the buildings on the Cape Mery side belong to modern construction days. The railway tracks in the foreground leads from the elevator and workhouse to a section of the 111-and-a-half million cubic yards of fill employed in building the port. The fact that ample sources of gravel are available in the neighborhood will be of importance in planning any future large extension to the present harbor works and elevator.



Looking east across the Churchill River from the Dominion government elevator. In the foreground extends the long elevator gallery above the dock where a steamer is loading Saskatchewan grain, and below it is the freight shed. Beyond the east shore and Saginaw Point lies Hudson Bay.



Churchill harbor from the east shore near Fort Prince of Wales. On the horizon may be seen Cape Merry, the elevator power house and gallery, and a dredge.



Welcomed by a pilot tug, a freighter arrives at the entrance of Churchill harbor for a cargo of wheat.

The Terminal Elevator

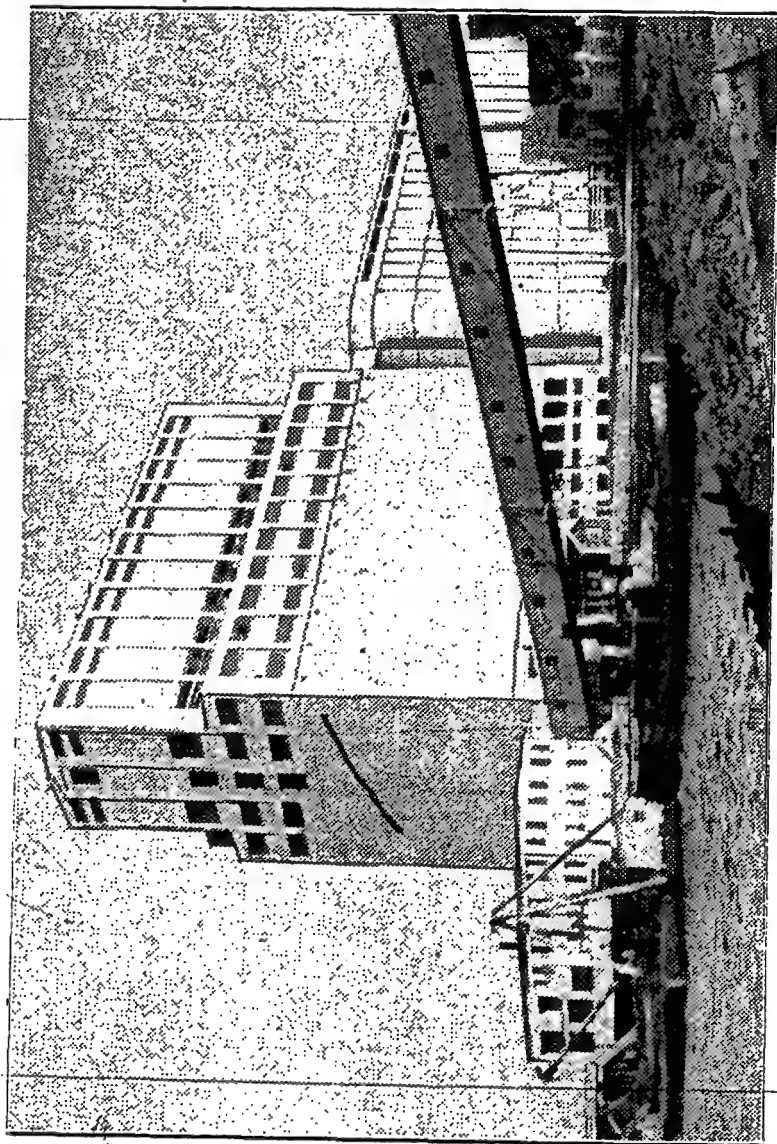
AT CHURCHILL the Dominion Government has erected a grain elevator which has all the advantages of modern design. Those who know both plants compare it with Pool No. 7 at Port Arthur as the highest praise they can give. The Churchill terminal is considerably smaller, but plans provide for an enlargement when required, from the present 2,500,000 bushels storage capacity up to 10,000,000. As the unit now stands, the workhouse itself has a capacity of 500,000 bushels.

The foundations were begun in 1930, and all the buildings—that is to say, workhouse, storage annex, office and power plant—were completed by September, 1931. The equipment was installed, and all that remained unfinished was about half the long conveyor gallery, this section being held up because the portion of the wharf on which it was to stand was not ready. The first two grain ships which called at Churchill that month were able to load from the gallery section already finished.

Churchill has two striking landmarks: this shining white tower and buttress of reinforced concrete, and the eighteenth century military stronghold on Eskimo Point. Fort Prince of Wales took close on forty years to build; the elevator, a more imposing and fortress-like structure in every way, sprang into being in barely a year. Such are the miracles of the age of power. It is a marvellous age, but unhappily man, the mechanical wizard, seems to have turned out pretty much a duffer



Cars of Saskatchewan wheat on track below the storage annex.



Churchill: 2,500,000 bushel terminal. The office building, where the government inspection department is also housed, is at the left. At the extreme right, below the inclined gallery, appears part of the cattle pens.

after all: with a host of inanimate but highly efficient slaves to do his bidding he still lives in the shadow of poverty.

That, however, is by the way. Let us go back to Churchill's house of wonder and note briefly what it contains.

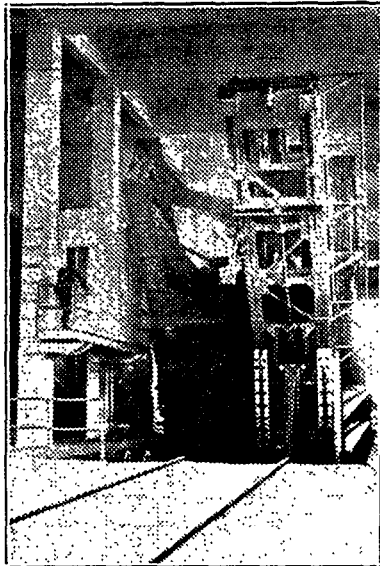
Equipment of the workhouse includes four receiving legs and four shipping legs, the former each with a capacity of 25,000 bushels per hour, and the latter 20,000 bushels per hour each; scales; batteries of cleaners of three different types; and a complete dust cleaner system.

Grain passes from the elevator to the dock by a gallery the total length of which is over 2,000 feet, being delivered to vessels by means of four belts, two on the lower level and two on the upper. The major portion of the gallery extending along the dock is about 1,500 feet long, so that three grain steamers may berth below its spouts. It is possible, by means of these four belts and twenty-three spouts projecting from the long gallery, to direct four separate streams of grain to the boats beneath at the rate of 20,000 bushels an hour for each stream. This being so, there seems little danger of congestion at Churchill, as far as grain loading is concerned, until such time as the volume of traffic has materially increased.

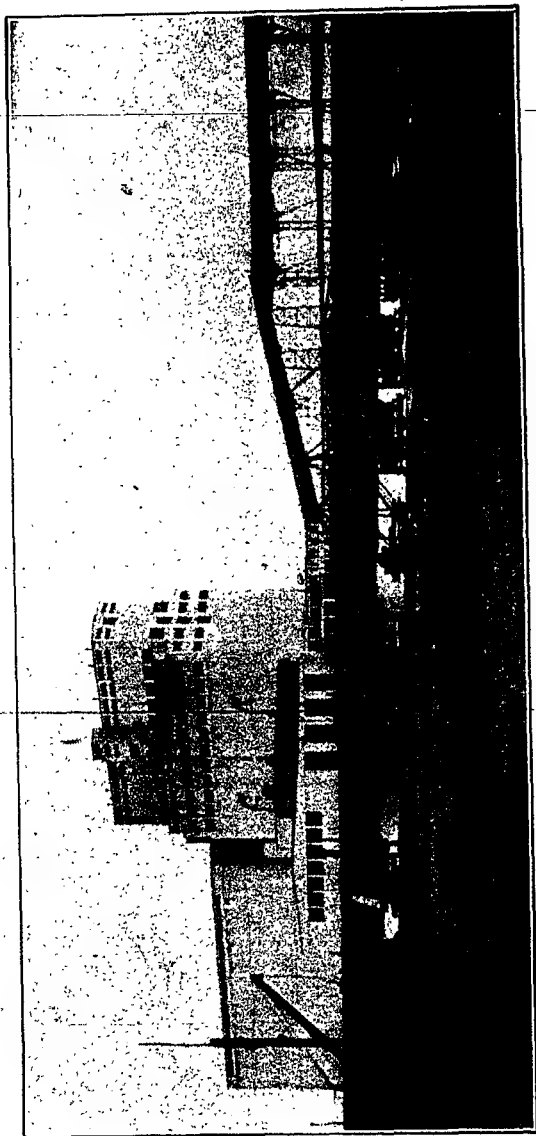
Equally up-to-date is the power plant which runs the big elevator, utilizing screenings as fuel. Elsewhere in the port, electrified throughout, coal oil is the source of power, and Alberta coal is also consumed in quantity.

The Churchill elevator, naturally, is a unique object on the shores of Hudson Bay. Visiting sea captains, many of whom have never before seen one of the most impressive phases of modern grain handling, are given an opportunity of going all through and watching its complex operations while their ships are loading. Their usual reaction is typified by the remarks of a British master who took a cargo of wheat from the northern Manitoba seaport in the fall of 1934, saying later that Churchill possessed an elevator which, for equipment and resulting efficiency, seemed second to none in the world.

Churchill has now been handling grain for over four years. Including the 1931 test shipments, receipts at the elevator to the end of 1935 total 14,719,496 bushels. The bulk of this wheat has been supplied by the Saskatchewan farmers' co-operative organization.



One of the four automatic car dumpers in action.



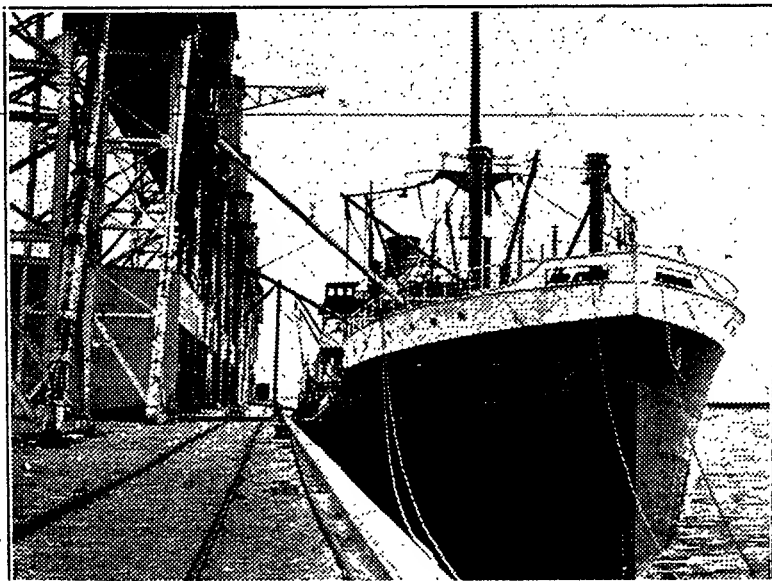
Elevator, car unloading shed and part of conveyor gallery from high rocky ground at the rear. The "dinky" engines were used during construction and are still useful for local transportation.

Early Trade

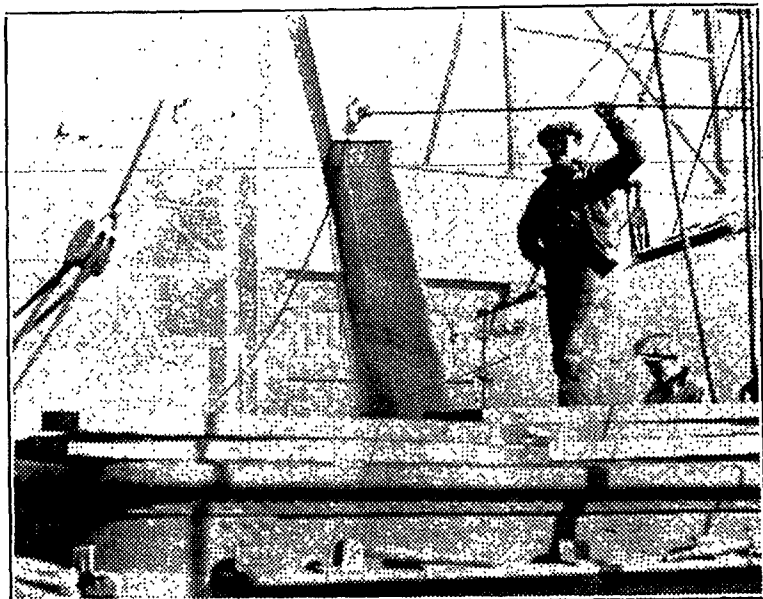
ONE of the oldest harbors in Canada though it is, Churchill's experience as a seaport to meet the requirements of modern commerce is limited to barely four years. Prior to 1931 its associations were practically confined to the fur trade.

In 1929 the Hudson Bay Railway was completed to tidewater, and two years later—a brief period considering the size of the undertaking—the port facilities were far enough advanced to permit the first trial shipments. As might be expected, grain led the way. In September, 1931, the *Farnworth* and *Warkworth*, two British tramp steamers, owned by the Dalgliesh Line of Newcastle-on-Tyne, reached Churchill and together took out 545,000 bushels of Saskatchewan wheat supplied for the purpose by the Pool's Central Selling Agency. The experiment was a complete success, both vessels reaching their European destinations early in October. August, 1932, saw the opening of the first regular commercial season for the Hudson Bay route. Ten steamers visited Churchill that season, another ten the following year, fifteen in 1934, and eight in 1935.

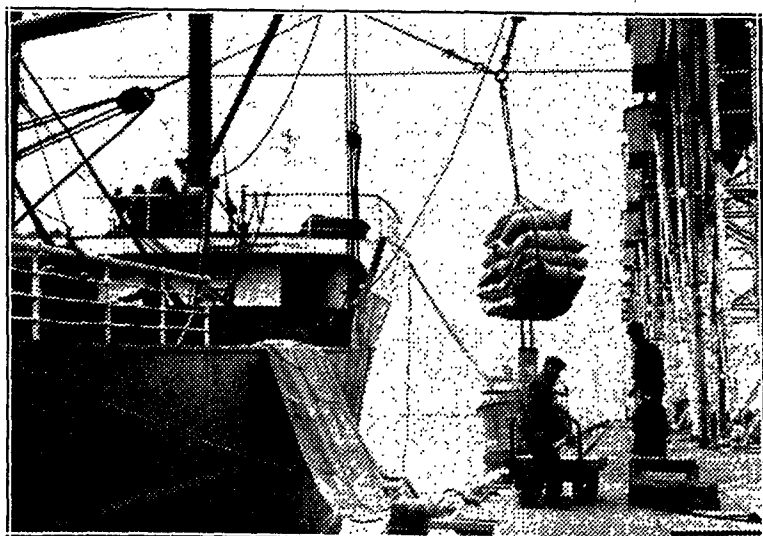
Thus there have been ninety entrances and clearances for the port of Churchill since the fall of 1931. A loss occurred north of Wales Island in Hudson Strait on October 1, 1932, marring an otherwise



A Dutch steamer loading wheat at Churchill, September, 1934.



A stream of Saskatchewan wheat pouring into the hold.



Hoisting aboard a sling of shorts, part of the 4,200 tons of Saskatchewan flour and mill products shipped out of Churchill during the 1934 season. One of the harbor tugs may be seen in the background.

excellent record. The ship sank with its cargo of 253,000 bushels of wheat, but there was no loss of life. In this case an official investigation declared that a proper look-out had not been kept while the vessel was in the vicinity of icebergs; no stigma, therefore, attaches to the route because of the accident, although its occurrence at such an early stage is naturally regrettable.

Ships flying British, French, Italian and Dutch flags have been sailing to and from Churchill, and every voyage and each passing season adds to knowledge of these northern waters and of the port on Hudson Bay. Nothing has occurred to diminish hopes that Churchill may become in time a fairly important point in the commercial life of Western Canada. The harbor is good, and the way to it presents no unusual difficulties to mariners accustomed to long voyages to every part of the world. So far navigation has been limited to two months, from early August to early October, but gradual extension is looked for as experience grows. How long a normal season ultimately will be, is largely guesswork, but the attitude at Churchill itself, expressed by men who have piloted vessels through the Bay and Straits, is that navigation can probably be carried on safely for nearly double the present period.

A new port seldom shows spectacular growth. Remembering the obstacles and handicaps with which apparently more favored routes had to contend in their early years, Churchill can regard its own showing with some satisfaction.

Wheat has provided the backbone of exports, the figures being:

	<i>Bushels</i>		<i>Bushels</i>
1931.....	545,000	1934.....	4,050,000
1932.....	2,736,000	1935.....	2,407,000
1933.....	2,708,000		
		Total.....	12,446,000

Other commodities are beginning to supplement the wheat export trade out of Churchill, but they are not yet important and it is the grain cargoes that make them possible. Some of these other products are derivatives of grain: in 1932, for example, the only exports besides wheat were less than a thousand tons of flour, rolled oats, oatmeal, shorts and bran. In 1934 flour and mill products to the extent of 4,200 tons went out to Europe. The first trial cattle shipment (200 head) was made in the *Brandon* in 1933, and another 580 head the following season. Some lumber was exported in 1933, but in 1934 Churchill loaded a more substantial amount, two million feet. Eight tons of honey about completes the export list.

Imports do not show up very impressively, and this is a question which undoubtedly will receive more attention in future, for a one-way traffic is unlikely to make a flourishing seaport. A small volume of general cargo has been landed each season, but most ships enter Churchill in ballast.

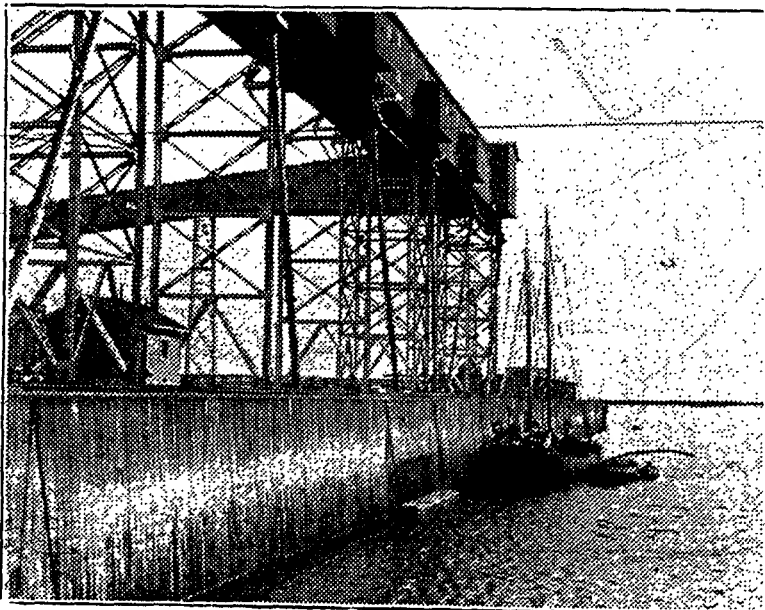
Figures quoted above put the 1935 season in rather a bad light compared with its predecessors. The number of ships and amount of grain were smallest since commercial activity properly began. A very difficult wheat marketing situation was responsible for this slump,

and since the Bay route must depend for a long time to come upon wheat, any slackening of overseas demand during the brief navigation season must have a serious effect on its record. Wheat was the sole commodity exported in 1935.

However, a somewhat disappointing season was partly redeemed by an increase in imports via Churchill. Inbound tonnage amounted to 2,261 long tons, an improvement over the previous year by 852 tons. This figure was made up of 852 tons of coal and 1,409 tons of general merchandise. A variety of items went into the latter, including office supplies, confectionery, liquor and ale, window glass, hardware, glassware and cutlery, barbed wire, binder twine, dry goods, and iron and steel castings.

Both Welsh anthracite and blacksmith coal have been brought to Churchill during the last few seasons. Among other goods not already mentioned are wire netting and bricks. Of the many things listed, almost all are represented just by small quantities.

Even with the improvement which has taken place the amount of imports remains negligible if compared with the annual traffic handled by many other ports. Nevertheless Churchill as a commercial seaport, considering its age and the world depression in which it was born, has been making a fairly good account of itself. One encouraging feature about the 1935 import business was that more consignees than formerly ordered the goods brought in.



In addition to the foreign export trade out of Churchill, there is some coastal traffic which has mostly to do with the fur trade and the missions along Hudson Bay. Here is shown a well-known caller at Churchill, the Hudson's Bay Company trading schooner Fort Severn berthed under the corner of the elevator conveyor gallery.

Some Problems of Development

FORTY-FIVE SHIPS have come to Churchill between 1931 and 1935, all taking out Western wheat as the main if not the only item of their cargoes. The 1934 season was the best to date, with fifteen overseas vessels (in addition to the usual coastal traffic) and the largest and most diversified exports. This, of course, is a small volume of shipping for a seaport which aspires to a place in the commercial sun, but as handicaps are progressively removed more substantial figures can certainly be expected in years to come. The port is still in its infancy; growth is likely to be gradual rather than sensational, and temporary set-backs need not cause dismay.

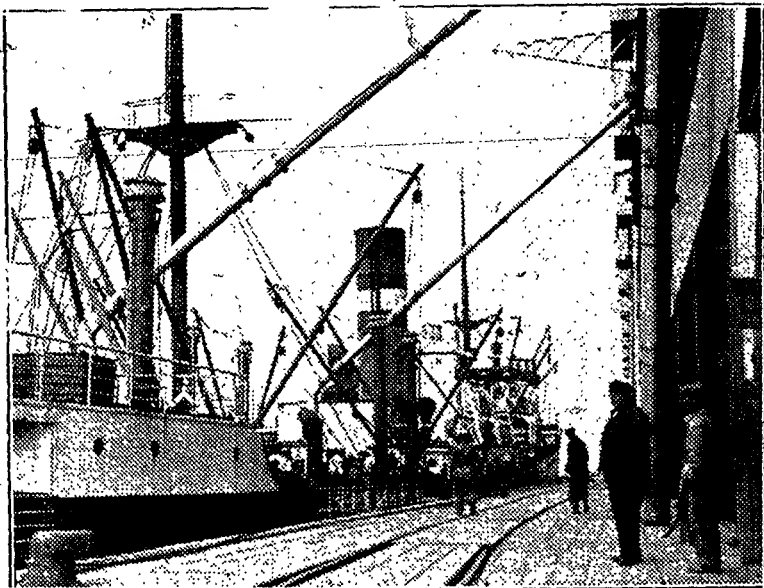
One of the major problems affecting the Hudson Bay route is marine insurance. With no experience upon which to base quotations, and few ships over which to spread the risk, the underwriters at first placed insurance rates at almost prohibitive levels. However, concessions have been made every season since 1931. Both hull and cargo insurance were lowered once more for the 1935 season, although even so they remain over two-and-a-half times the rate prevailing on the established St. Lawrence route.

A shipping season of barely two months is the most that Churchill has enjoyed so far. The governing factor is insurance, and for 1935 the minimum rates applied to the period from August 10 to October 10, with higher figures for an additional five days up to October 15. An intermediate level prevails as regards cargo insurance between July 10 and August 10; but in practice this has little significance, since no hull insurance is obtainable at all and ships entering Hudson Strait during this early month must do so at their owners' risk. Still, the way is being paved toward a longer season, and as soon as it is shown to be feasible remaining barriers no doubt will be removed; meanwhile the existing season has not been exploited to the extent it might be. In any case there is a definite tendency on the part of shipping and insurance interests to regard Churchill more favorably.

It is highly important that this should be so. To justify the large expenditures made and to fulfil the hopes of Western Canada, the port should be used to the utmost. Length of season also enters into trade questions: as to whether, for example, binder twine might be brought in by Churchill in time for harvest in any year, or whether new crop wheat from Saskatchewan could be exported through Hudson Bay in quantity before close of navigation.

An increase in inbound shipments is another matter for consideration, because no trade route can get very far on a one-way traffic. This problem has a direct bearing on ocean freight rates, the reduction of which will greatly improve the value of the Bay route to Western Canada.

The question of import trade means a great deal to the Prairies as a region still dependent on outside sources for most of the things it



The Churchill dock; Saskatchewan wheat for Europe.

uses. Now it is natural that these Western provinces should be anxious to remove all possible obstacles from getting what they want and cannot supply for themselves. Some of those goods may be best obtained from other parts of our own country, some from the United States, some from abroad. The Hudson Bay route should be useful in fetching goods, in season, from the northern Atlantic seaboard as well as overseas.

But restrictions on trading are paralyzing to a seaport and deeply injurious to any area, such as Western Canada, not equipped to produce practically everything for itself. International trade has been throttled of recent years. Most people are agreed that it is healthy for nations to exchange one another's surpluses—taking, "surplus" to mean an amount over and above the home population's own real needs—but they have not yet reached agreement as to what must be done to bring about a state of affairs to the advantage of all concerned.

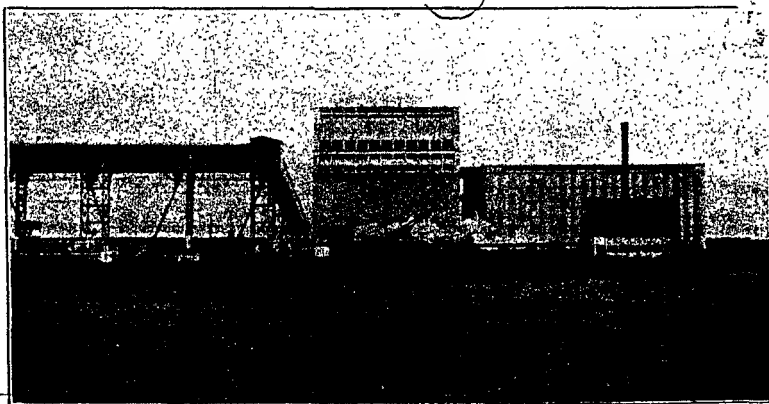
In any case it does seem clear that Western Canada would like to be free to buy from its own best customers. Great Britain leads all as a user of prairie farm commodities, and specializes in the production of many articles so far not produced here. The Bay route is a direct pathway between the two lands, its usefulness limited only by a climatic handicap.

Reciprocal trade via Churchill therefore is most desirable. Removal of barriers to its proper development is one of the biggest problems confronting the West today.

All the various points mentioned in this section, indeed, are linked

up together. More ships unloading at Churchill mean more opportunities to take out Western Canadian produce; more ships sailing in and out of Hudson Strait without loss tend toward lower insurance; this in turn helps to pull down freight rates; the more traffic passing through the Straits, the more worthwhile does it become to maintain ice-breakers to stretch out the navigation season; and the longer the season, the easier it becomes to deliver goods where and when they are required.

Thus the main thing in developing a new untried port is to furnish cargoes, and this, as far as the eastward part is concerned, Saskatchewan farmers, through their co-operative organizations, have been doing since the beginning.

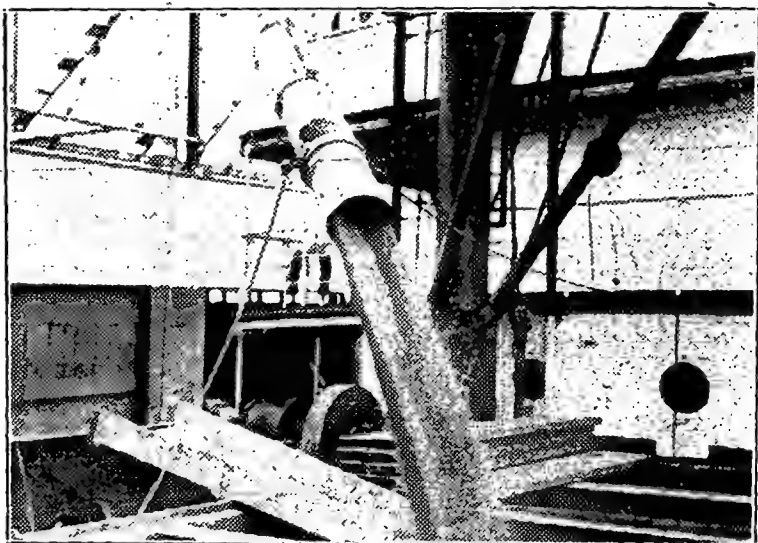


Section of Churchill's waterfront from the harbor.

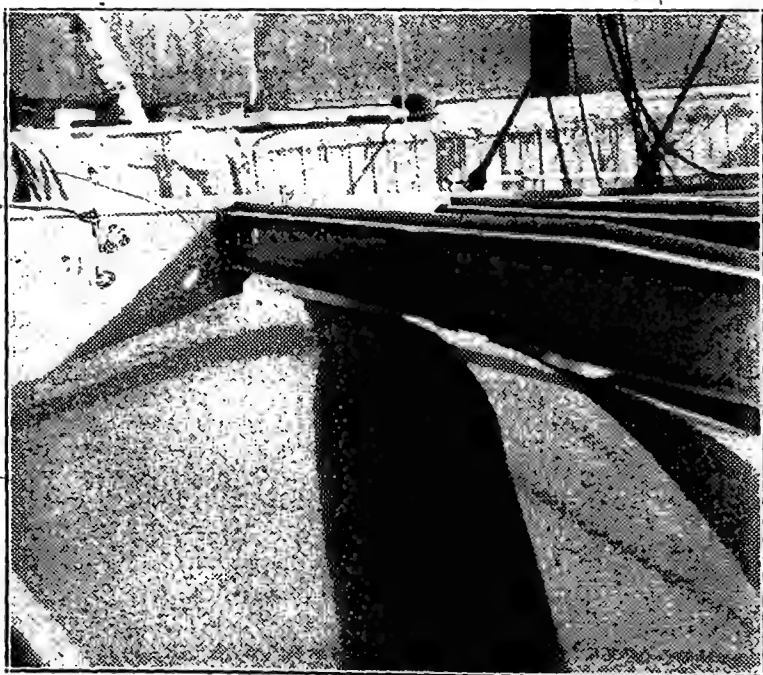
Grain Ships at Churchill

NO doubt in time the arrival of a steamer at Churchill will not cause more than passing comment, but in these early days it is an event. Everyone knows just when a ship is expected in port, and is on the lookout either to welcome an old friend from other seasons or become acquainted with a stranger.

In either case the reception has that heartiness characteristic of frontier places. Ship and crew assume an importance attached to rare things. When radio advices tell of a vessel's approach, the upper lights of the great elevator burn as an extra guide to the officer on the bridge watching through the darkness for signs of his destination. Departure is usually attended by a parting salute of horn blasts from



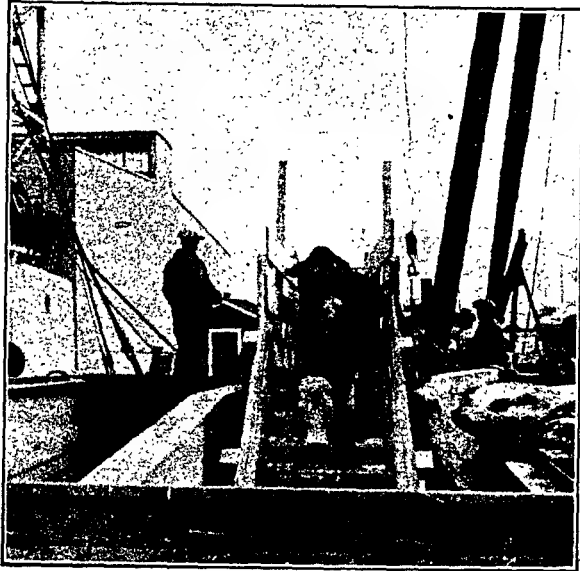
High-grade wheat from Saskatchewan pouring into one of the forward holds of a big freighter docked at Churchill.



A hold, nearly filled with wheat.

Churchill's tugs (the *Ocean Eagle* and *Graham Bell*) and perhaps from harbor dredge and locomotives on shore as well, these courtesies being acknowledged by the outbound freighter. Such friendly touches will be lacking when, a few weeks later, the ship slides through the traffic of an Old World port where only a few people directly concerned take note of its existence.

Meanwhile the names of Hudson Bay route pioneers, particularly those with two or more voyages to their credit, are familiar to Churchillians and, indeed, to many dwellers inland. Best known because of repeated voyages are the *Thomas Walton* and *Rio Claro* which have come to Churchill three years running; the *Grelhead*, a visitor in 1932 and twice in 1934; and the *Brandon*, which heads the list with four voyages, two each in 1933 and 1934. It will be noted that even with a curtailed season five double trips have been made since the route opened.

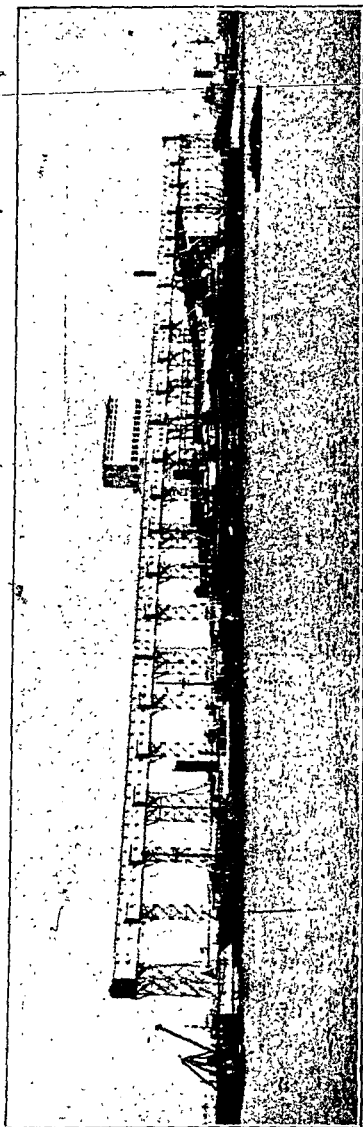


The original cattle shipment of 1933 going aboard

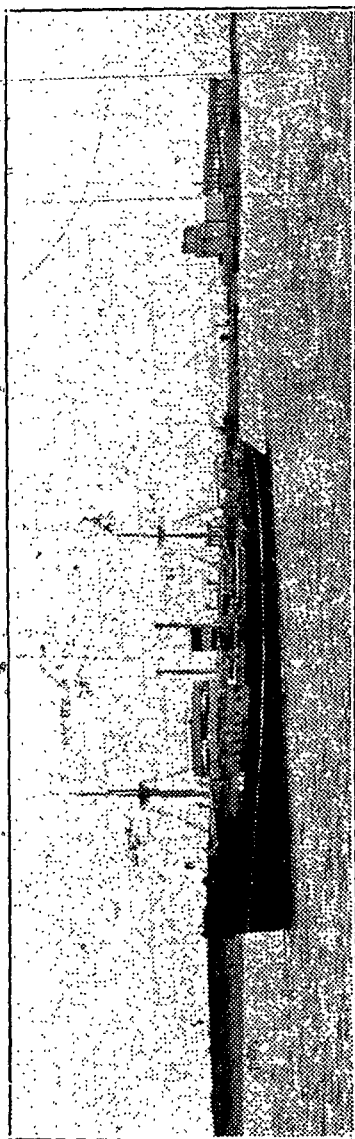
Eighteen steamers of British nationality have sailed through Hudson Bay to Churchill, four French, three Italian and two Dutch; or twenty-seven altogether; with forty-five round trips among them (including the *Brighfan* which foundered in Hudson Strait on its return passage).

Every one of these ships has sailed eastward again with Saskatchewan wheat, perhaps supplemented by other kinds of merchandise. The amount of grain in a full cargo varies from about 225,000 to 335,000 bushels. All the cattle sent to Britain so far (nearly 800 head) have been transported by the *Brandon*, the only member of the present Churchill fleet equipped for this service; at the same time it has carried as much as 325,000 bushels of wheat on a voyage.

The original cattle shipment, by the way, was a deal between the Saskatchewan Livestock Pool and the English Co-operative Wholesale Society. The cattle were gathered from points in northern Saskatchewan and entrained to Churchill and there cared for until ready to



The present dock can accommodate four tramp steamers at once, three of them under the elevator gallery and the fourth further upstream. The illustration shows an occasion when this situation occurred, in August, 1933. The four ships are the Thomas Walton, Rio Claro, Sierents and Pennyworth (later wrecked in the St. Lawrence).



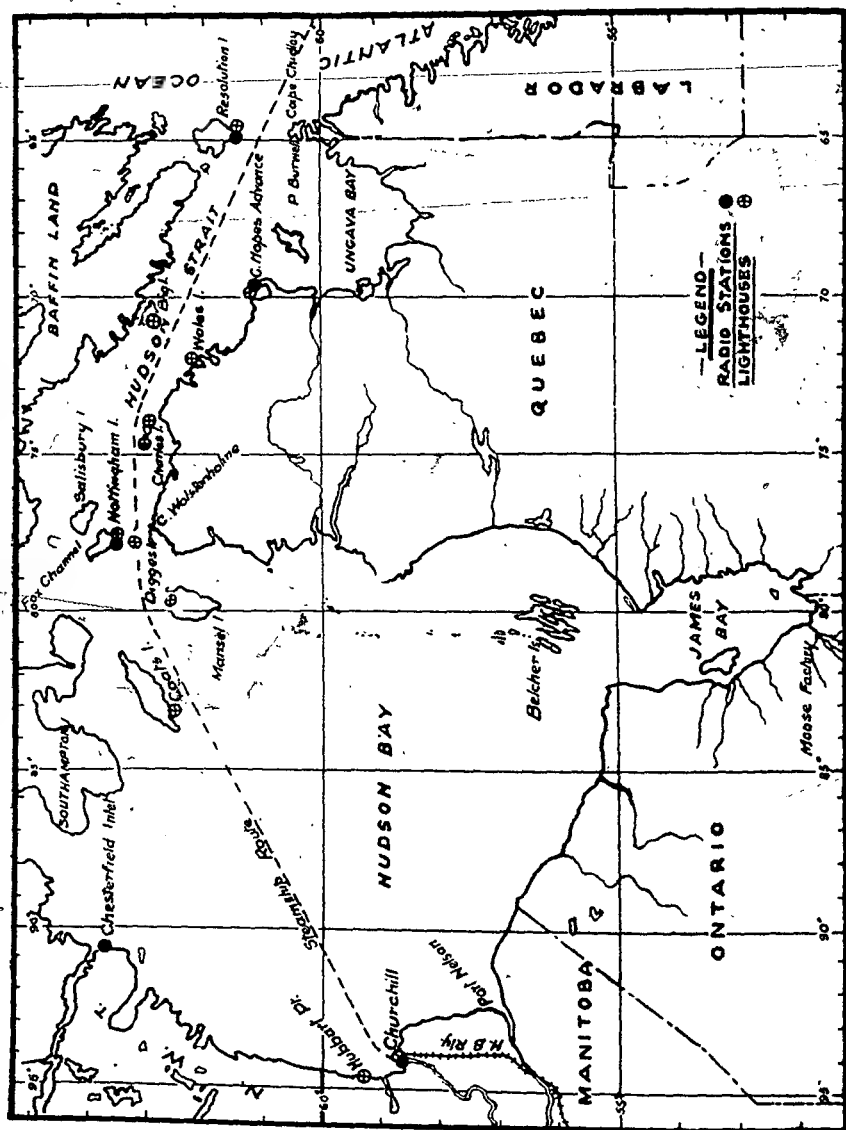
Outboard bound with a cargo of 320,000 bushels of wheat. This is the Charles L.D., a modern French motor ship combining utility with elegance of design and fittings, and with the unusually high working speed of 13 knots per hour when loaded.

go aboard ship. (There are twenty pens, capable of accommodating four hundred full-grown animals, being situated in front of the elevator and connected with the wharf by a runway.) Both rail and water movement were carried out satisfactorily.

Lest any misunderstanding arise concerning wheat exports via Churchill at this early stage, it should be pointed out that trading facilities attached to older routes do not yet exist. There is no such thing as a "Churchill price"; wheat in store at Churchill is not in position to be delivered against a futures contract. At present, therefore, considerable financial risks are involved in developing Hudson Bay grain exports, such as could not be undertaken by an individual: this pioneer work can only be done by large organizations able to face risk, and, if necessary, absorb certain losses in the interests of a worthy project. Some day the situation may be altered.



The Churchill cattle pens.



The Hudson Bay Route.

The Hudson Bay Steamship Route

CHURCHILL, the only first-class natural harbor on the entire west coast of Hudson Bay, is situated about midway up that immense basin. After leaving port the ships are out of sight of land almost entirely until they complete their three thousand mile voyage to British shores. They pass fairly close to Coats, Charles and Resolution Islands, and perhaps one or two others, and also skirt Cape Wolstenholme at the extreme northwest corner of Quebec; with these exceptions the scene presents nothing but water and sky, and maybe ice in the Strait.

One advantage of this expanse of unrelieved open water is that it simplifies navigation. Here is none of the difficulty of the St. Lawrence or even of the approach to Vancouver and neighboring ports of the Pacific northwest. Instead of a tricky channel requiring a pilot's services for many hours, the route through Hudson Bay and Strait follows a broad, direct waterlane without shallows anywhere.

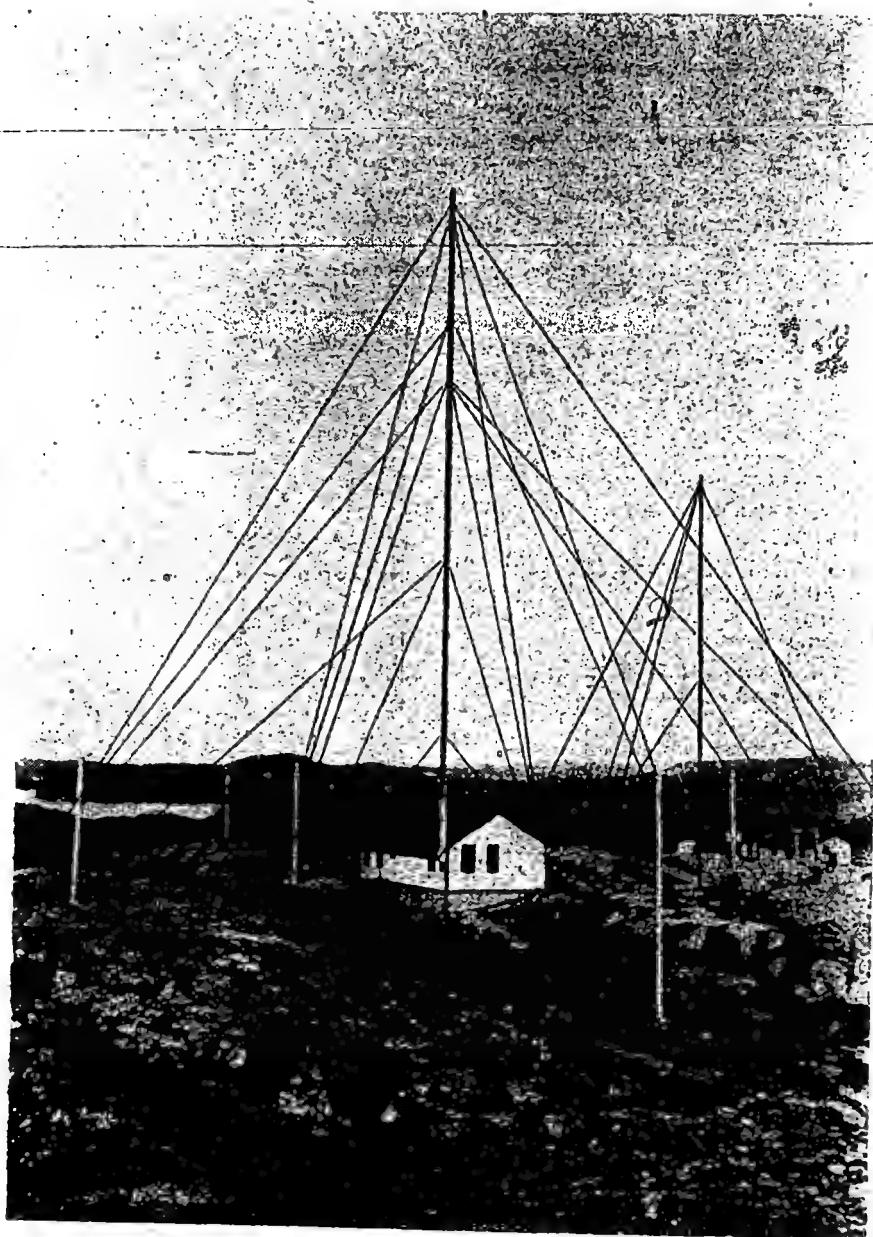
From the mouth of Churchill harbor a ship can clear Resolution Island and Cape Chidley in as few as three courses. That is to say, once it has left the dock at Churchill a mile astern, a distance of somewhat over one thousand statute miles, with only two changes of direction. In practice, there may be four main courses altogether: the first from Churchill to a point just north of Mansel Island, the second close by Cape Wolstenholme into Hudson Strait, the third, a short one parallel to Charles Island, and the fourth southeast out into the Atlantic.

Hazards certainly do exist in other ways, but the Hudson Bay route enjoys at least one natural advantage in its lack of dangerous reefs and shoals. The Bay and Strait have been carefully sounded by the Dominion government hydrographic survey, showing deep water all along the direct steamship route from Churchill.

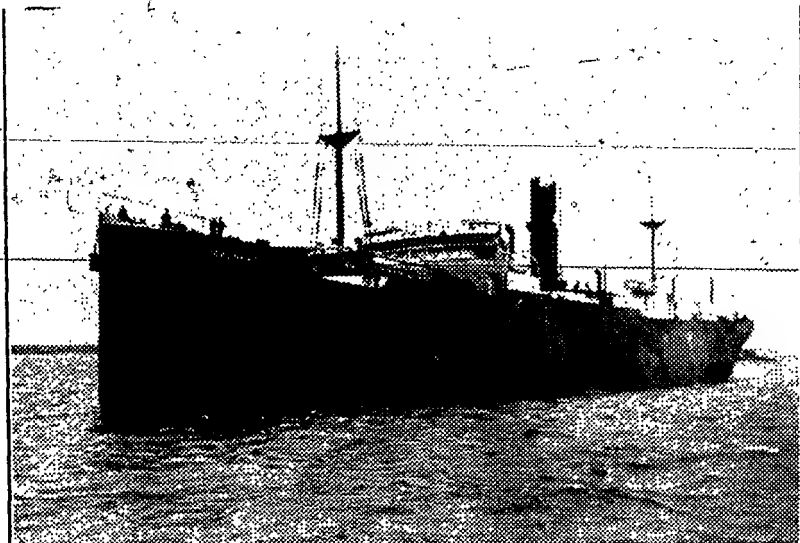
Nature has imposed handicaps to offset such favorable factors as the above. The chief one is ice, beside which the other drawbacks of magnetic disturbance and fog are negligible. The ice question does not arise within the greater part of Hudson Bay proper; compass



The Captain of a Dutch ship calling at Churchill last season, on the bridge of his vessel.



Radio direction-finding station on Resolution Island, at the mouth of Hudson Strait.



The Greelhead, a typical tramp steamer. This vessel, which made two trips to Churchill in 1934, suffered some ice damage on the second inward voyage through Hudson Strait, and had to put into drydock for repairs when it completed its return crossing of the Atlantic.

irregularities are noted in the Bay and as far as Charles Island; thick weather may occur anywhere on the route, and certainly is by no means peculiar to this part of the world.

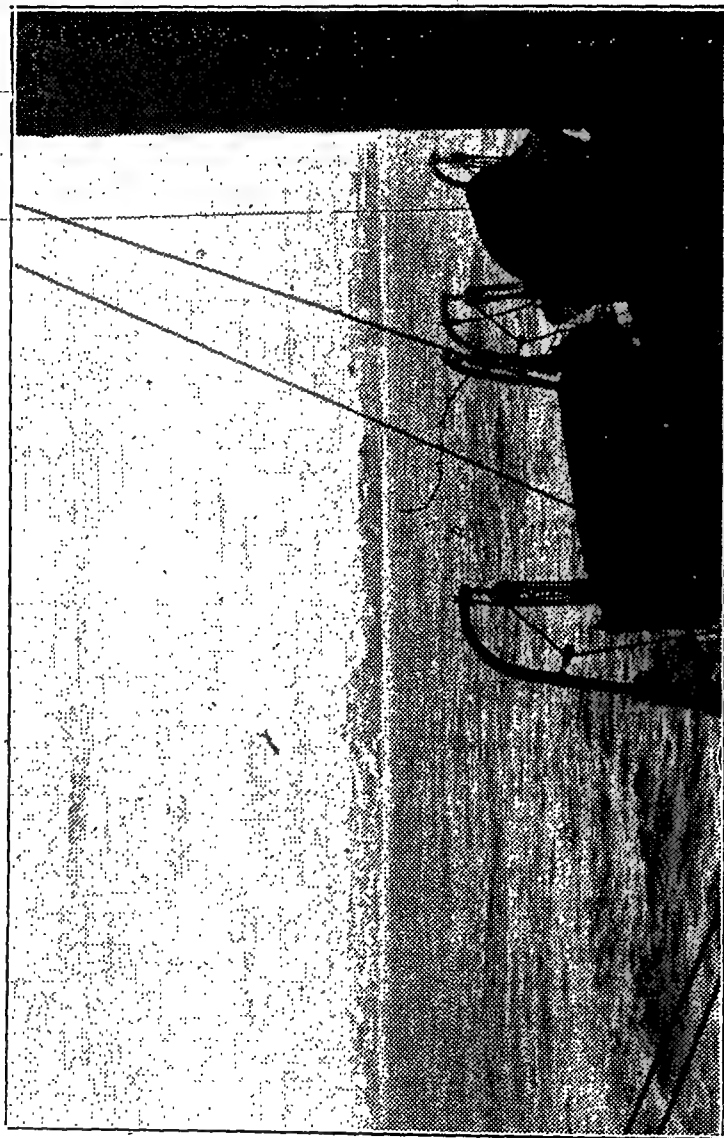
Thanks to modern invention, cruising through Hudson Bay and Strait is not the perilous business it was when Henry Hudson and Jens Munck contended with ice, currents and winds in those northern waters. Steam has succeeded the sails of old, reducing the time of crossing from weeks to days. Yet the steamship is subject to one drawback, for its propeller is a vulnerable point when encountering ice. Perhaps indeed there may be still a place in the Churchill trade for that old windjammer fleet which carries wheat from Australia to England round Cape Horn.

To the Dominion Department of Marine is entrusted the responsibility of easing navigation difficulties over the new route. This service takes several forms.

Five government-owned radio stations, equipped with direction-finding apparatus, play a valuable role. They are situated at Churchill, Nottingham Island, Cape Hopes Advance, Resolution Island and Chesterfield Inlet (far up on the northwest side of Hudson Bay). Ships thus can readily check their position. Besides, weather forecasts and ice reports covering the Bay, Strait and adjacent portion of the North Atlantic are broadcast daily.

Next there are lights placed along the route to Resolution Island, the intermediate points being Hubbard Point north of Churchill,





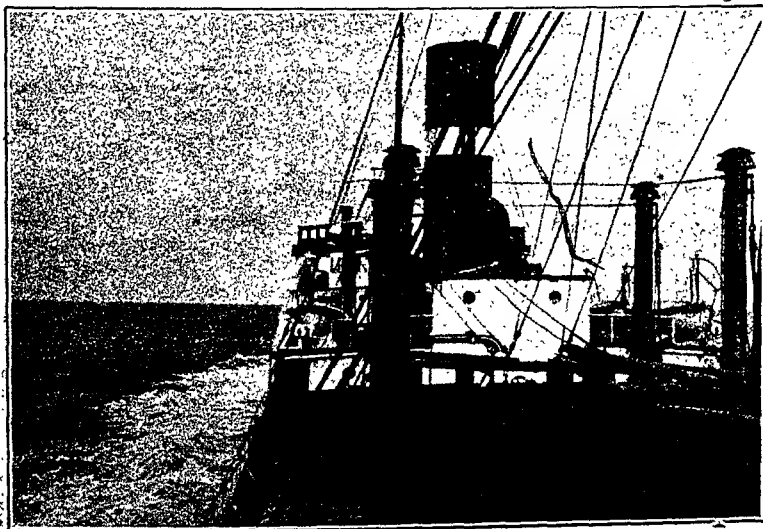
The bold, rocky coastline in the vicinity of Dinges Islands and Cape Wolstenholme, with masses of late September lying on the bleak hills. Here the Hudson Bay coast rises to heights of about 2,000 feet, in contrast with the two very low sharply inclined beaches which quibound ships pass a few hours before entering Hudson Strait. Near Cape Wolstenholme the coast reaches its greatest altitude, falling away again, back to the east, to the solid, in general, the east side of Hudson Bay terraced while the west side is flat and marshy. Three major river systems—the Nelson, Churchill and Albany—all come in from the west.

Coats Island, Mansel Island, Digges Island, Nottingham Island, the west and east ends of Charles Island, Wales Island, Big Island, and Cape Hopes Advance. All are established on recommendation of the Lighthouse Board of Canada, and further lights may be provided as considered desirable.

In addition to these shore services, the government maintains a powerful patrol steamer, the *N. B. McLean*, a familiar name on the Bay. This fine, large vessel is reputed to be the most modern and efficient ice-breaker in the world. It patrols Hudson Strait throughout the navigation season, being equipped with salvage gear, diver and diving apparatus, towing winch and haulers, repair material and tools, and, of course, radio. Both Churchill tugs are reinforced for ice, and one of them, the *Ocean Eagle*, also has a salvage plant, so that a ship needing assistance can get it from Churchill or the Strait, whichever is closer.

Finally, the Canadian Hydrographic Service has been charting Hudson Bay and Strait, and issues navigation charts, sailing directions and tide tables. The government steamer *Acadia* does this important hydrographic survey work.

Such, in brief, are the present aids to safer navigation on the Hudson Bay route. These duties are performed by a handful of men cruising the waterlane between northern Quebec and Baffin Land, and by others at bleak and lonely outposts scattered along the fringes of that vast wilderness.



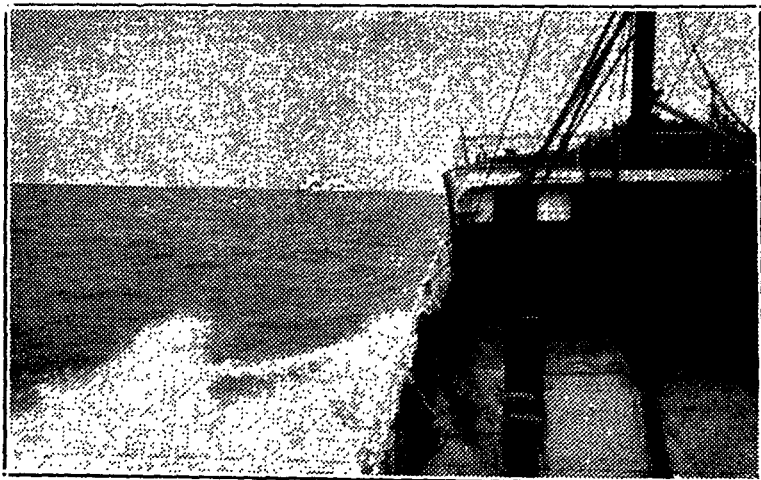
Grain laden freighter in, Hudson Bay.

Hudson Strait

WHETHER an average navigation season for cargo steamers into Churchill can ever be much longer than the present two months, depends almost entirely on what answer is forthcoming to the ice question. Opinions tend to differ at present; the exceptionally severe conditions obtaining in 1934, for example, give rise to a pessimistic view, while a more open season would inspire hopes of prolonged sailings.

Until well on in July ice fields of varying extent and density are present in Hudson Bay even within view of Churchill itself. Then after the Bay is clear ice continues to linger in the Strait as a rule until early August, the western end being last to become free.

Judging by reports of the three radio direction-finding stations along Hudson Strait, the vicinity of Nottingham Island at the west end experiences most ice. In 1933, considered to be a fairly good season, no ice at all was observed from this station between August 9 and October 31, with the exception of two or three days at the beginning of September when ice from Foxe Channel appeared (an annual occurrence of which Captain Balcom of the patrol steamer *N.B. McLean* said, "it is usually a small quantity and disappears again and gives very little trouble"). There was a different story in 1934, however, when only between August 7 and September 9 did Nottingham Island report no ice visible; that season the Foxe Channel contribution was large, and remained along the route for the balance of navigation. Yet ships negotiated the Strait safely.



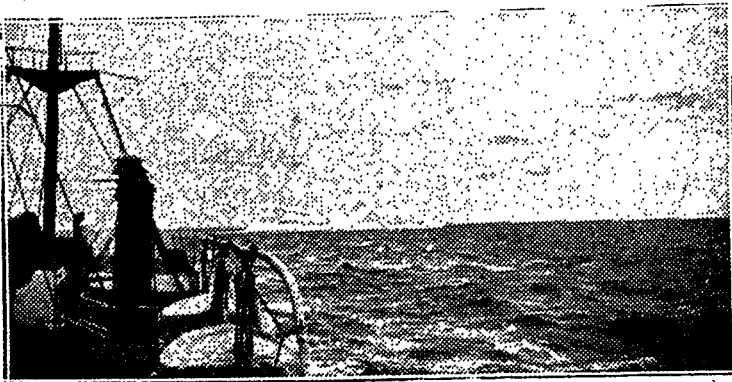
Iceberg in Hudson Strait.

Study of government reports of weather and ice conditions would indicate that extension of the navigation period, should that occur, is most likely to be tried first of all after October 10 rather than before August 10. The Imperial Shipping Committee in its latest report hesitates to recommend any extension for marine insurance "until there is more widespread evidence of ice conditions on the steamer route up to October 15 and for some time longer."

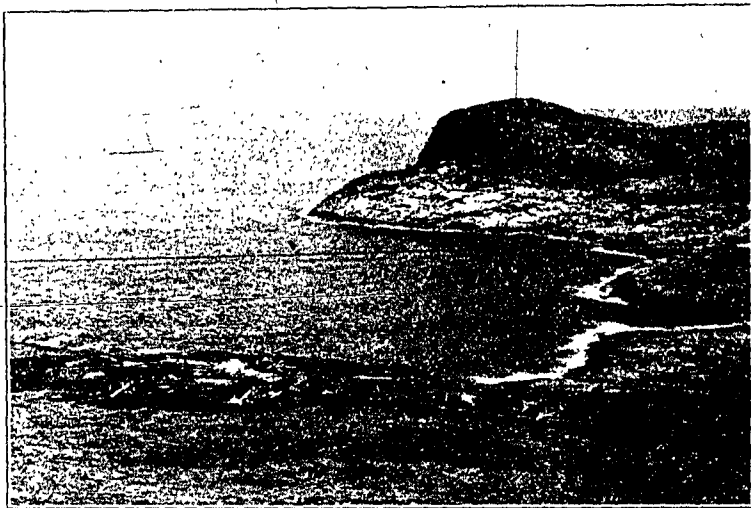
At least one visiting ship's captain has proposed that some form of escort in thick weather might be adopted in order to combat the ice danger in Hudson Strait, a procedure followed at Black Sea grain ports where an ice-breaker is employed. The whole distance which may be regarded as hazardous is from Resolution Island to the south end of Coats Island, about 600 statute miles.

Ice, then, is the big problem. "Except for ice conditions," reported the master of the *Dalworth* on the 1934 season, "found route most easy." His ship was equipped with gyro-compass, and so any embarrassment from an erratic magnetic compass did not arise. Necessity or otherwise of gyro on the Hudson Bay route is another matter on which mariners are not quite agreed as yet. They all appear satisfied with navigation aids in the Strait, although a suggestion is made occasionally that fog signals might be installed, particularly on Resolution Island.

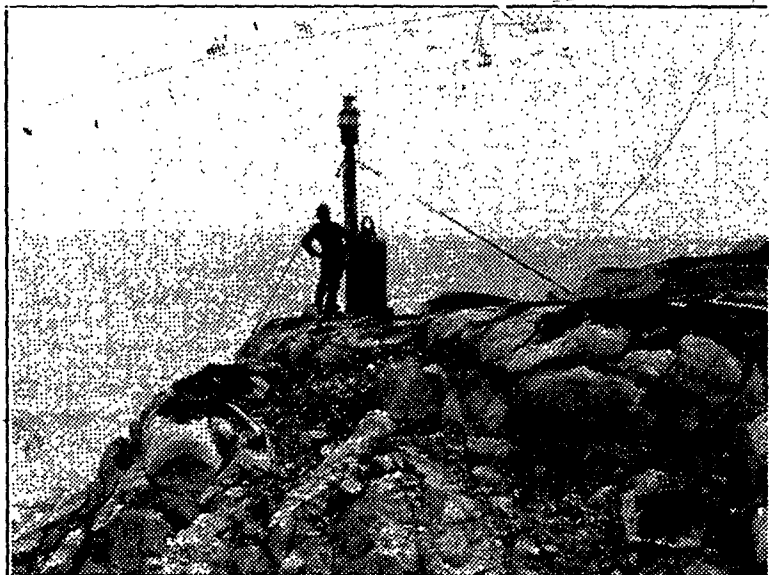
But with all its vicissitudes, Hudson Strait is no longer surrounded by the menace of the unknown as when its discoverer penetrated that forlorn sea. There were no radio stations, no lights, no competent patrol in the month of July 1611, when Hudson's small ship wrestled interminably with ice which drifted back and forth on the turbulent tides.



Leaving a big berg astern.



Cape Hopes Advance, on the south side of Hudson Strait. This bold headland forms the westerly extremity of Ungava Bay.



One of a dozen lights placed at strategic positions along the Hudson Bay steamship route. The light shown above is located at the eastern entrance to the Strait.

Across the Atlantic

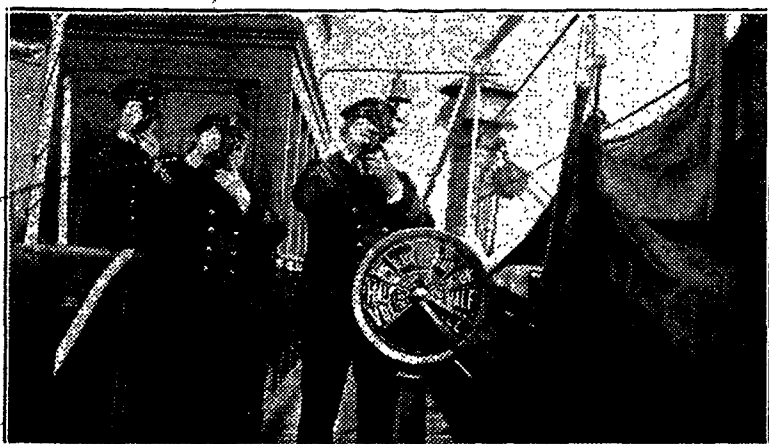
SO the grain-laden steamers emerge at last into the open Atlantic. By the time Resolution is left behind, they have completed approximately one-third of their voyage to Europe. Perhaps the most hazardous part is over, too, yet even ice in Hudson Strait may be a minor threat compared with the Atlantic in its fury.

While the great majority of cargo ships cross the ocean many times without serious damage if not without trouble, now and then they count themselves fortunate to reach port at all. Even the biggest freighter is a puny thing in the grip of a storm, and foul equinoctial weather may be expected by ships leaving Hudson Strait in the latter part of the northern navigation season.

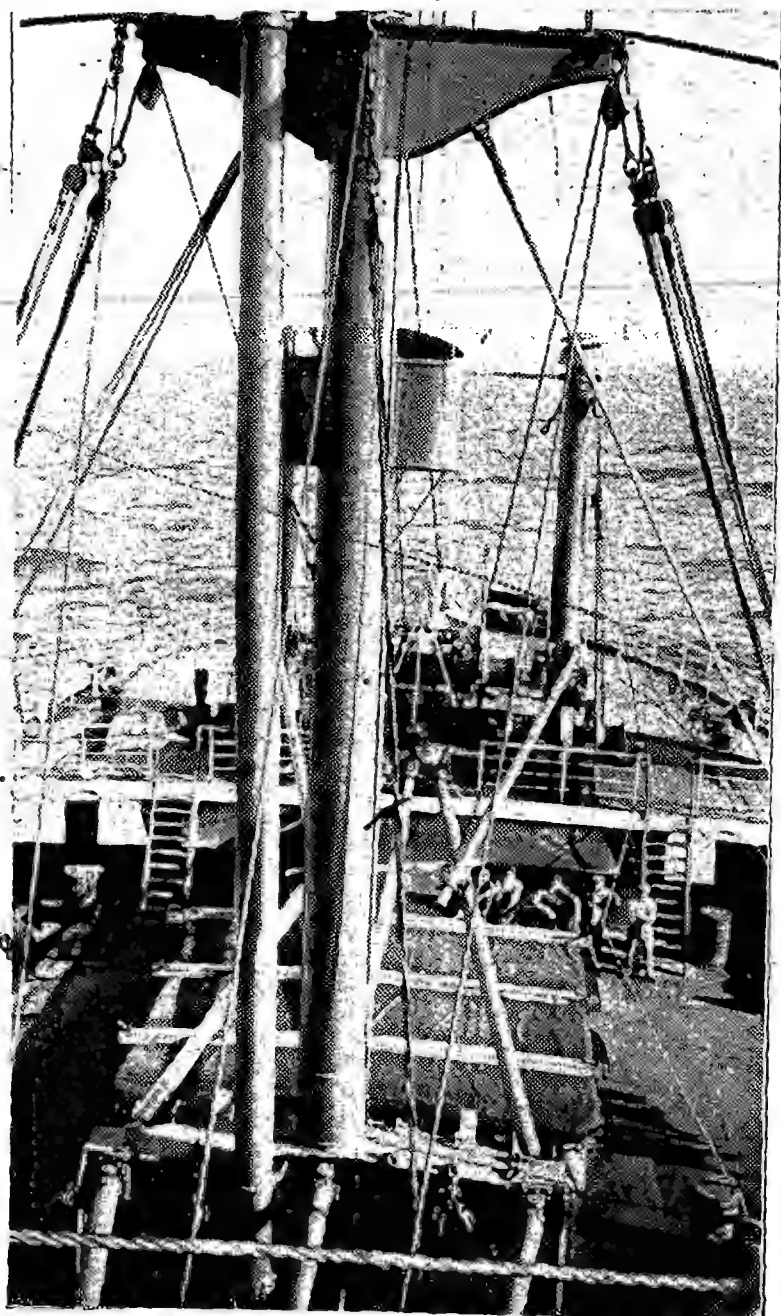
The fact that ships do founder in mid-ocean, sometimes with all their crew, serves as a reminder of the risks undertaken by seamen in carrying food from Western Canada to the people of Europe. They perform an essential service, and in so doing contend with the still unconquered ocean which, though it may not frequently exert it, has the power to sweep men and ship and cargo into oblivion. The needs of international commerce require very real devotion to duty.

Alongside giant luxury liners of the present, the vessels engaged in the everyday work of carrying goods from one part of the world to another are insignificant. Registered tonnage of an average tramp steamer ranges from about 4,000 to 6,000 tons.

One of the thirteen ships chartered by Saskatchewan Pool Elevators Limited during the 1934 Hudson Bay navigation season may be taken as an example, typical except that its size was larger than most.



On the bridge; taking noon observation with sextants for the ship's position.

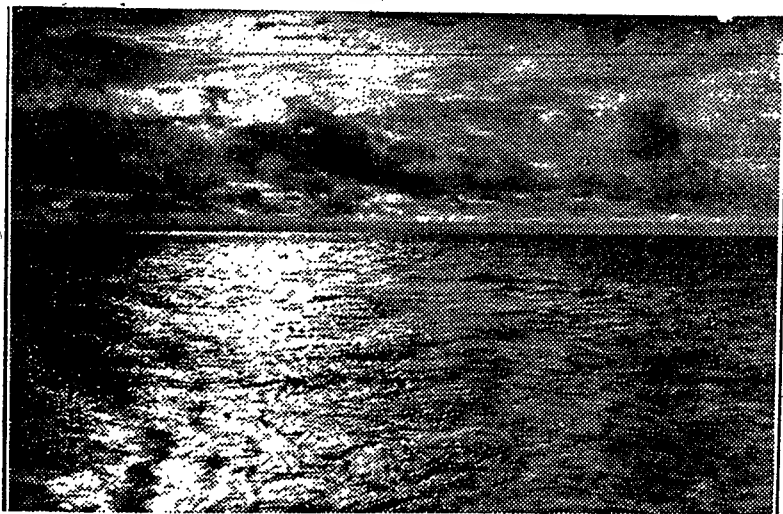


Sunday aboard the Dutch steamer Bilderdyk, in mid-ocean, with members of the crew enjoying sunshine on deck after several days rough weather. One of the forward hatches may be seen, its contents of wheat carefully protected against waves.

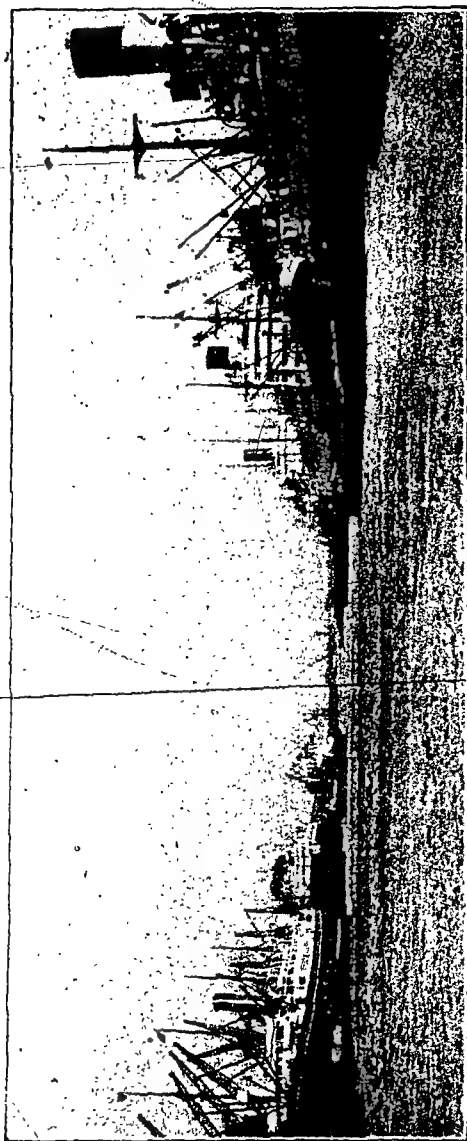
This ship, the Holland-America Line *Bilderdyk* of Rotterdam, was built in 1922, having a gross tonnage of 6,850 and the fairly high working speed (loaded) of about 11.5 knots per hour. (A knot corresponds with a nautical mile, or 1.15 statute miles). It burns crude oil as fuel. The crew consists of thirty-five officers and men.

After cruising the seas for a dozen years the *Bilderdyk* took part in the Churchill trade in September, 1934, and again last season. In the words of its captain, "navigation was safe enough during daylight and good visibility; however, when there is ice in the Strait it will be necessary to slow down or stop during fog and dark nights." Like too many other ships visiting Churchill up to date, this one arrived in ballast. On the return voyage it carried 277,284 bushels of Saskatchewan wheat, 1,569 tons of mill products, and eight tons of honey—the honey being a unique item.

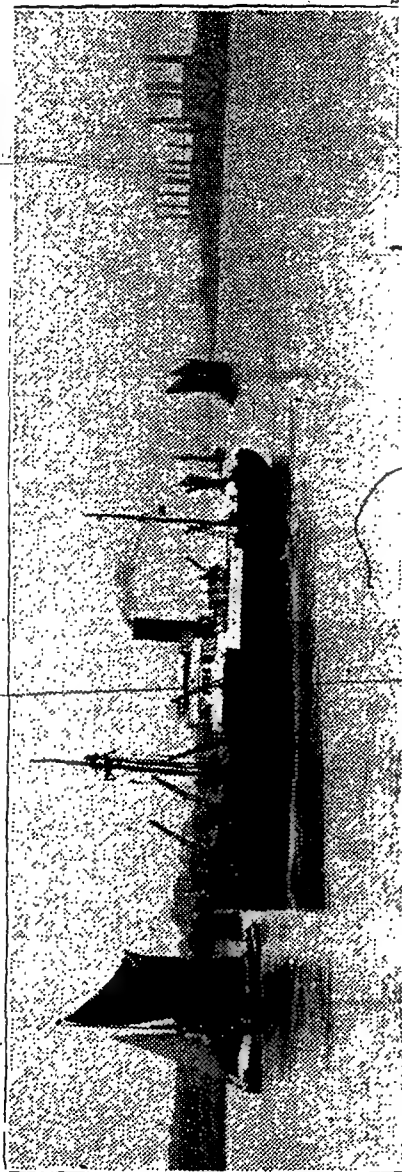
The route from Churchill to London passed just south of Greenland, avoiding ice in the vicinity of Cape Farewell, thence southeast to the Fastnet Light on the southern coast of Ireland, and so up the English Channel. Ice in Hudson Strait necessitated cruising at half speed for several hours one night, and out in the Atlantic the ship ran into three days' heavy weather which cut down its speed somewhat; the whole passage of about 3,375 nautical miles (3,880 statute miles), however, occupied less than thirteen days. Few freighters have made the crossing in less time than that, and some have taken as long as twenty days.



Calm weather at sea.



In the Royal Albert Dock, one of the largest of London's many docks.



Thames shipping below Greenwich.

The Port of London

THE BRITISH ISLES possess many famous seaports, London being the greatest of all. Its age is a matter of conjecture, but it dates back certainly to Roman times, and perhaps into antiquity before Celtic possession was disturbed. London, therefore, can look back on twenty centuries of trading, during the last four and a half of which it has been commercial centre of the world. The port's growth in modern times is clearly indicated by the tonnage of shipping entering it: 435,000 tons in 1700, and 21,373,000 tons in 1926.

International trade, of course, has shrunk since the present depression set in, but the relative positions of the chief ports of the United Kingdom have not changed, London coming first, and Liverpool and Hull next in order. Apart from their activity in other directions, these three ports handle the bulk of wheat imports.

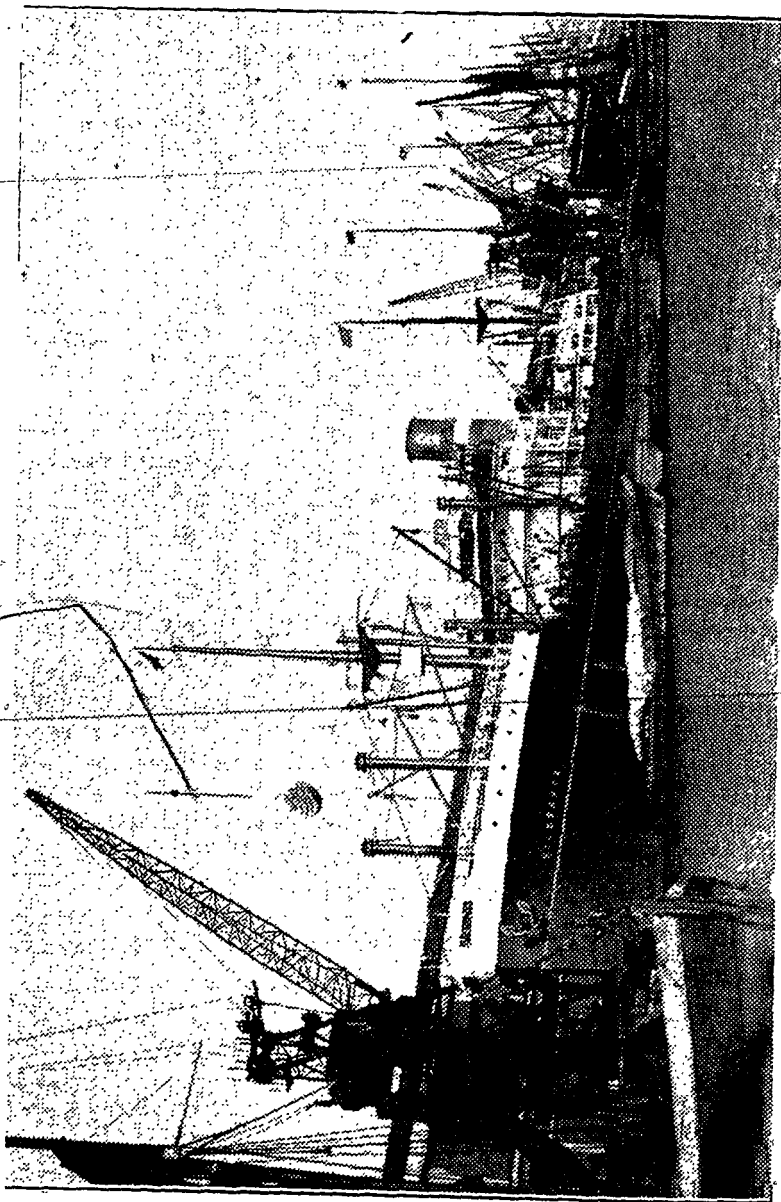
The Port of London Authority, a public body formed in 1909, is charged with deepening and dredging the River Thames and the improvement of accommodation in the port. The P.L.A. is reputed to have displayed much energy in making good deficiencies in the port as it existed up to twenty-five years ago, when dock owners, "reduced to poverty by senseless competition" (to quote a special article in *The Times*), were unable to provide satisfactory service or necessary extensions. Today there is a channel of at least twenty-seven feet at low water and forty-seven feet at high water from the sea up to the King George V Dock at North Woolwich.

It is a mammoth port today, with about thirty-three miles of quays, 140 miles of railways and forty-five miles of roads in the docks, and approximately 1500 cranes of all sizes for discharge and loading of goods.

Ships flying the flags of all nations line the main artery and intricate byways of the Thames dock system, from Tilbury to the Pool of London. Their cargoes are as varied as the products of the earth. And of these, grain, sugar, tobacco, wool, meat and timber are the leading commodities brought from overseas.

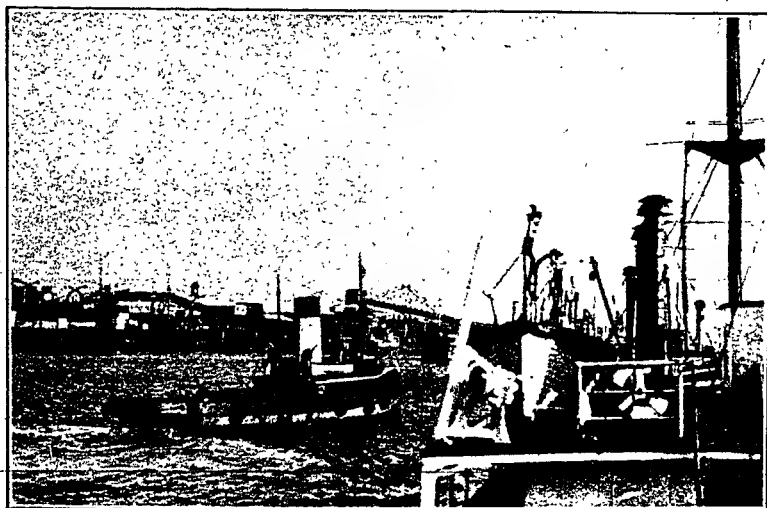
“London stands out unique among the seaports of the world in its antiquity, in its unbroken chain of history and in the magnitude of its trade.”

In contrast, there lies beyond the Atlantic, on the remote sub-Arctic shore of an inland sea another place which, within the past five years has begun to render its contribution to the vast trade of the port of London. Ships have plied between Churchill and London for upwards of two centuries, it is true, but now the old fur trade is giving place to a more vital and balanced commerce. Churchill has become a modern seaport in its own right, entrusted with what is hoped will be an increasing amount of Western Canada's external trade. A direct link is thus being forged between the prairies and the greatest seaport in the world.



The Bilderdyk, newly arrived from Churchill, unloading Saskatchewan mill products in the Royal Albert Dock, London.

Here, then, is a grain ship from Churchill, steaming cautiously up the Thames with pilot in charge—the river pilot, who at Gravesend, replaces a colleague taken aboard off Folkstone in the English Channel. Tugs appear and guide the vessel into a great dock where it takes its place in a long avenue of freighters and passenger steamers. Between this scene and the embryo port on the edge of Canada's northern tundra, from which it has just come, the contrast is startling. London absorbs the ship; there are so many others that one more arrival will scarcely be noticed.



Tug bringing freighter from Churchill up the Thames.

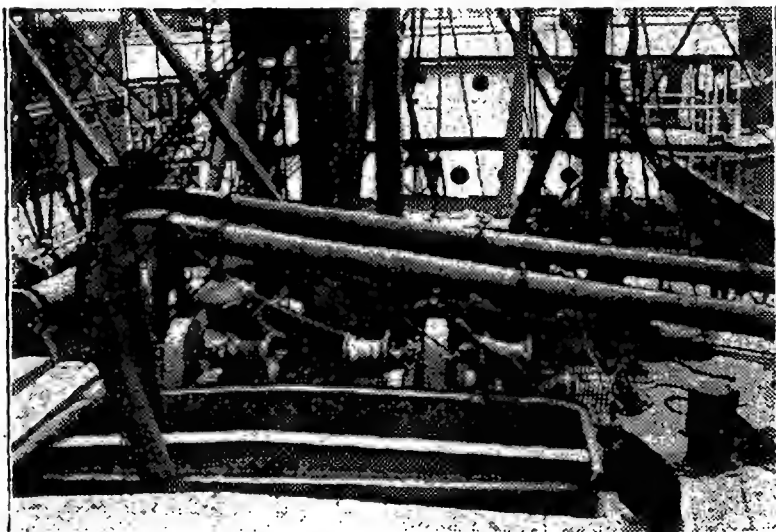
Yet Churchill, insignificant though it may be in point of size, is equal if not superior to most older ports in one respect. Latest to be built, it has added to the initial advantage of an excellent natural harbor that of modern construction, and is probably unsurpassed for handling the traffic in which it specializes so far—grain. London on the other hand, is still in process of replacing obsolete equipment and repairing defects left as a legacy from the days when a central responsible port authority was lacking. Facilities for unloading grain present a case in point, these being apparently by no means up to date. The principle is the same as elsewhere, but operating speed seems comparatively low.

Wheat is commonly unloaded by means of a floating suction elevator which draws grain from the vessel's holds by means of pneumatic spouts. It is sucked up to the top of the structure and there weighed, and discharged by other spouts into barges lying alongside. Or it may be discharged by the same suction device directly into one of London's several large dock granaries.





Floating elevator discharging wheat into barge, London.

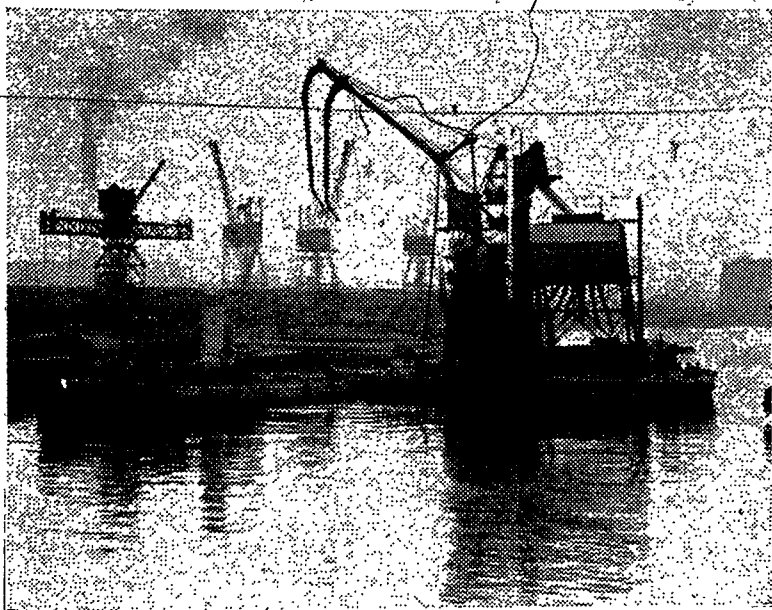


Pneumatic spouts sucking wheat out of ship's hold.

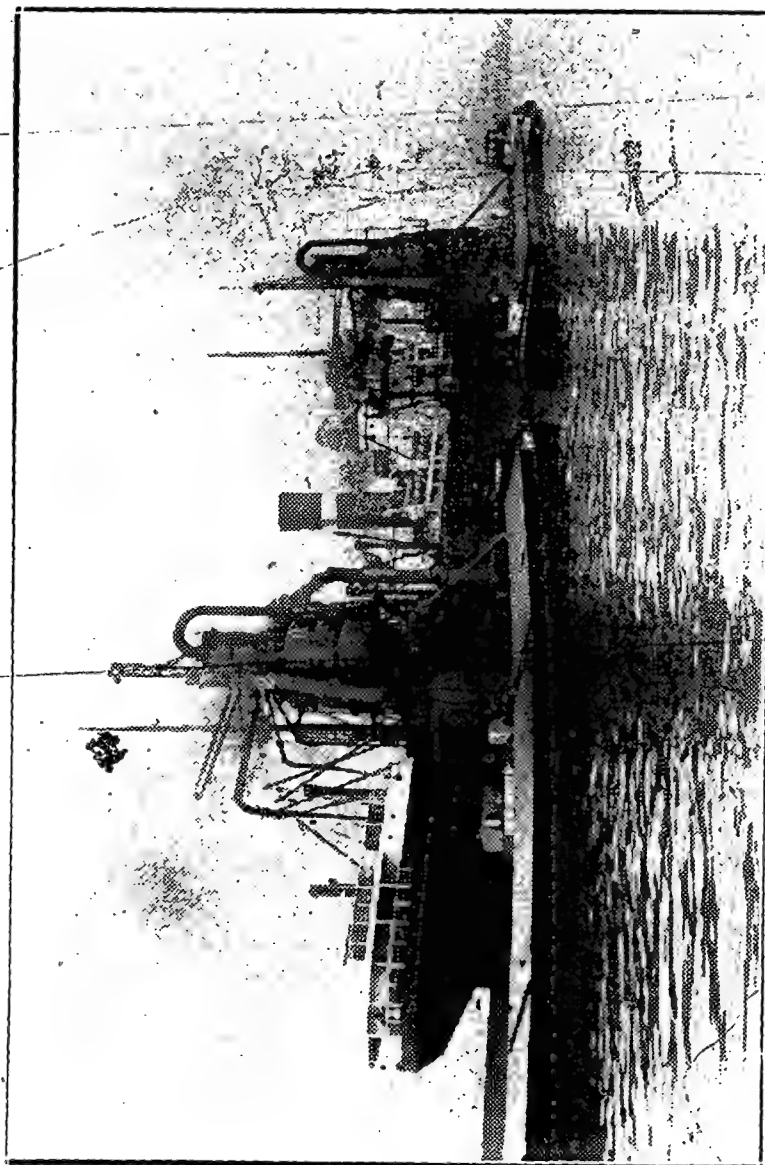
It may be interesting just here to consider costs of transporting Western Canadian wheat to London or other British ports, via Churchill, and also via the St. Lawrence route. Charges for the 1934 season, summarized from statements of the Board of Grain Commissioners for Canada, are made up of the following items:

	Churchill	St. Lawrence
	cents per bushel	
Handling at country elevator, inspection, broker's commission.....	3.75	3.75
Railway freight.....	12.985	13.5
Handling at terminal elevator, inspection, loading into vessel.....	1.5	1.5
Lake freight and incidental charges.....		6.4
Average marine freight and insurance.....	9.515	6.35
Total.....	27.75	31.5

These figures give Churchill, during its brief season, an advantage of 3.75 cents per bushel. The advantage is not quite so real as indicated, because of lack of trading facilities previously referred to, but the comparison does bring out clearly enough the future possibilities of the Hudson Bay route for wheat exports.



Floating suction elevator being towed away after unloading part of vessel's cargo. This is in the Royal Albert Dock, and in the background appears part of the Co-operative Wholesale Society's flour mill at Silvertown.



Grain ship from Churchill being unloaded in the Siberia Dock, Antwerp. Three suction elevators alongside are making rapid work of discharging the cargo of Saskatchewan wheat into long lighters or Rhine-ships.

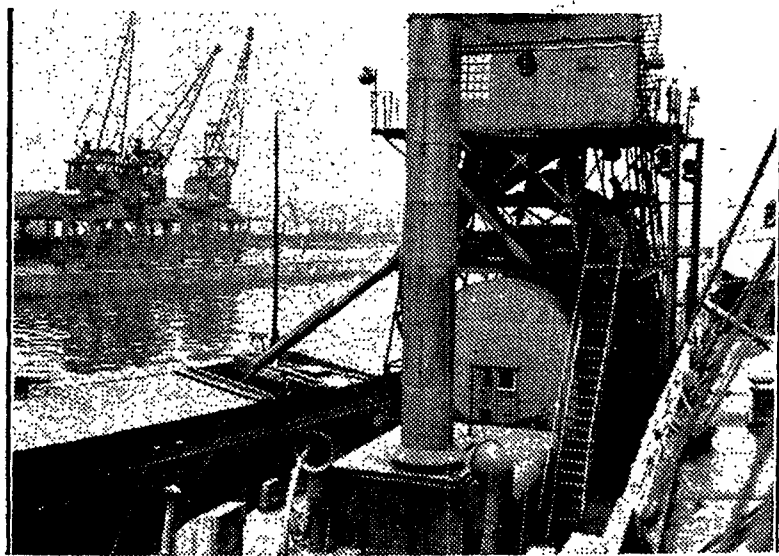
Antwerp, a Continental Port

BY no means all the wheat from Churchill is unloaded at British ports. A fair proportion goes to the Continent, particularly to those great Western European seaports, Antwerp, Rotterdam, Hamburg and Marseilles, whence by rail and by waterways the grain is carried far inland.

Notwithstanding the drastic decline in international wheat trade in the last three years, continental Europe continues to supplement by imports its own very large production of wheat. In the crop year 1933-34, when world imports of wheat and flour had shrunk from a previous annual average of around 750 million bushels down to 519 million, Germany took 29 million, France 27 million, the Netherlands 25 million, and Belgium 44 million. In the same period 227 million bushels of wheat and flour were landed in Great Britain and Northern Ireland. Canada's share of the aggregate international trade was 195 million bushels.

World takings were much the same in 1934-35; Canada supplied only 166 million, her smallest exports since the War. Nor does the present crop year hold out hope for a total volume of trade anything like what was known in the 'twenties.

This contraction, one of the major factors in the protracted and almost world-wide depression, is an outcome of Europe's steady at-

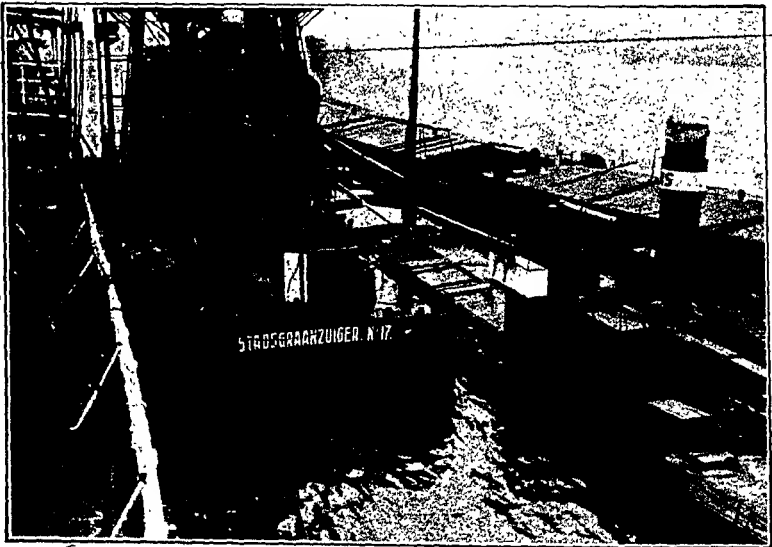


The grain having been weighed at the top of the floating elevator, is spouled into a lighter.

tempt to restore its agriculture thrown out of gear by the War. Should she continue to foster an industry which, for centuries, has been vital to her economic and social well-being, the outlook for an early restoration of the post-war scale of wheat shipments is dubious. Canada, however, by reason of its ability to supply superior hard wheat for bread-baking purposes, has good prospects of maintaining and even improving the leading position which it has occupied in the wheat trade since War-years.

Such a port as Antwerp, we may be sure, will always welcome the sight of ships bearing Canadian wheat. This ancient Flemish city, situated fifty miles from the sea on the River Schelde, antedated London as the emporium for the trade of Europe, and by the sixteenth century had become prosperous and famous in the realms of culture as well as commerce.

Because of its strategic position, it is one of the largest ports in the world. In 1927, 11,500 ships, with a combined tonnage of 23½ million, entered Antwerp, and an equal number cleared, in addition to five million tons coming by canal and river from the interior. Much of the grain from overseas destined for various Western European countries is received here and transferred to lighters for a further water journey. Handling facilities are highly efficient, an indication that the port values this phase of its activities and is anxious to encourage it.

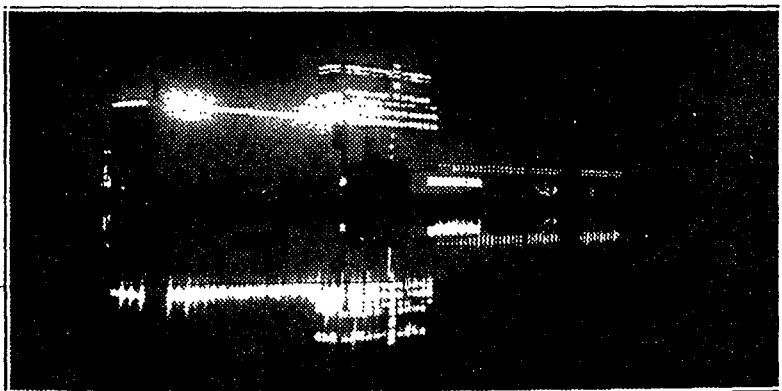


The fleet of suction elevators at Antwerp are the port's property. The Dutch name on the stern of this one, Stadsgraanzuiger, means literally "municipal grain sucker."

Conclusion

THE present pamphlet, dealing with the course taken by a shipment of wheat when consigned from Saskatchewan to Great Britain or the Continent by way of Churchill, has also attempted to review briefly the background of this northern seaport and to suggest its possibilities as well as difficulties in its path.

The trial period of a port is measured by years, so there need be no dismay at the relatively slow progress which Churchill is likely to make: that will be in line with ordinary experience in such matters. Possibly by the time international trade has remedied conditions which now hold it in the doldrums, the Hudson Bay route will have completed its apprenticeship.



The Dominion government elevator and conveyor gallery lighted up for extra guidance of a steamer approaching Churchill harbor by night. The lights are reflected in a pond lying directly behind the elevator on the landward side.

That international trade will be revived, few seriously doubt. It may change somewhat in character, and the rules which have governed it in past decades may be amended as the modern world becomes adjusted to altered circumstances brought about largely by the new power age. For the boon of electric and other forms of energy, and constantly improving means of putting that energy to use, ought to enable the fortunate countries possessing it to produce more abundantly for their own needs and trade large surplusses abroad for goods still deficient.

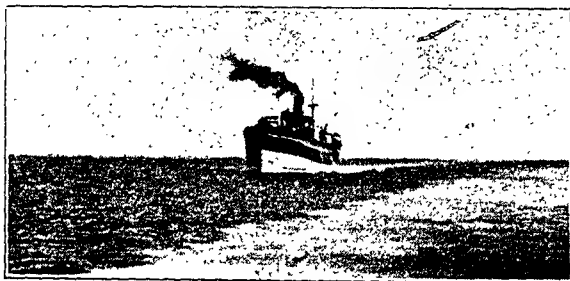
That being so, there is certainly a place for Churchill in the affairs of Western Canada. Within limits imposed by Nature—and even these can be modified—the Hudson Bay seaport should perform valuable service in the not remote future. In any event, the Prairies will hardly lose by having an alternative route both to Europe and to

parts of eastern North America. Like this Western country itself, Churchill is being built on wheat. Gradually our basic export commodity is likely to dominate the picture to a lesser extent as other articles are developed and brought to seahoard, but certainly for a long time Churchill will be known primarily as a grain port, and, it is to be hoped, a thriving one. Stimulation of imports, without which trade is not trade at all, is equally necessary in the expansion of this national enterprise, as well as for the economic welfare of the West.

As a concluding word, we may quote from the report of the Saskatchewan Royal Grain Inquiry Commission, written early in 1929. The reference to Churchill brings out the hopes held by Western farmers in this direction.

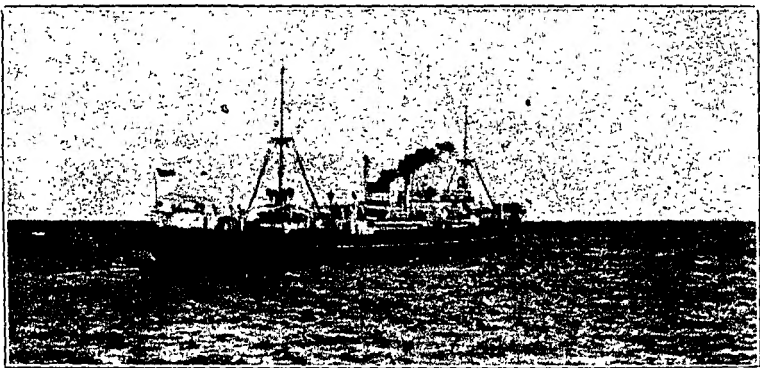
"For many years Western Canada has been looking forward to the completion of the Hudson Bay Railway. The announcement that steel had reached tidewater, which was made a short time ago, was met with enthusiasm by every class, but particularly by the producer of grain. He sees in the opening of this route, not only a short route for a large portion of his exportable surplus of grain, but also that the complicated system of Great Lakes, transfer houses, canals, barges, etc., such as he has had to contend with through the eastern route, is entirely eliminated. In addition to the aforesaid, perhaps the most important consideration of all is the possibility of a route whereby he can export his grain without contamination. The announcement that the government was assuming the responsibility of immediately building a terminal elevator at the port meets with the entire approval of the producers of grain throughout Saskatchewan, and the unanimous view of the producer, as expressed to your commissioners, is that any further elevators that are built at the port should be government owned and operated. In this view we concur, and recommend accordingly."

That was seven years ago. Today, with the Hudson Bay route actually in operation, we can say at least that what was foreseen and hoped for is gradually coming to pass. And as much as ever a large portion of Western Canada looks to Churchill to play a significant part in its future economy.

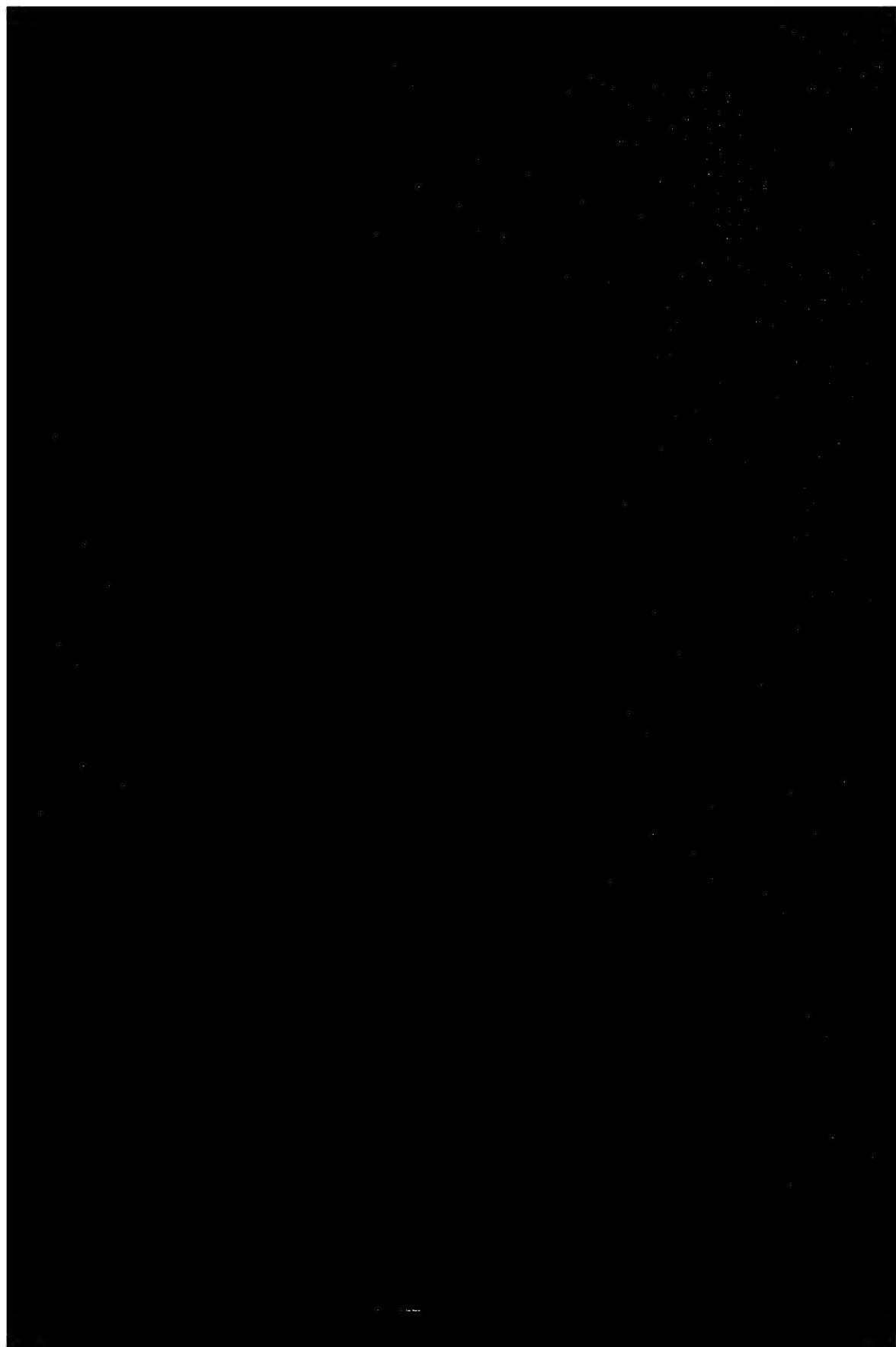




Port Hurvell, an inlet near Cape Chidley, of the eastern entrance to Hudson Strait. In the cone in the background are situated Hudson Bay Company and R.C.M.P. posts. A supply ship lies in the channel. Port Hurvell was occupied as one of three bases in 1927 when the *Hornet* power-
ment sent an expedition to reach you're prior to establishing navigation aids in the Strait. Inventions, hangars for airplanes, storehouses, and a
 wire-less post were erected, and a crew spent two winters at this barren rock-girl spot. In the summer of 1929 the Port Hurvell station was
 dismantled and a direction-finding station built instead on Resolution Island on the opposite side of the Strait entrance.



Outward bound: this French motorship has just dropped the pilot (in the launch to the right) and is sounding a parting salute as she steams out into Hudson Bay.





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